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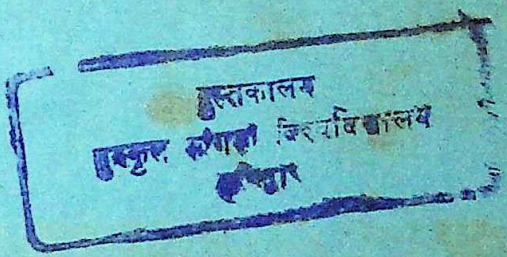

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Professor C. Lloyd Morgan

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GENTILE'S PHILOSOPHY OF THE SPIRIT

PROFESSOR W. G. DE BURGH

I

GENTILE'S philosophy merits the attention of every serious thinker, for it presents the doctrine that reality is spiritual in a more uncompromising form than is to be found elsewhere, and claims to solve on this principle all the great problems that have beset the history of metaphysic. His own name for it is Absolute or Actual Idealism (*Idealismo assoluto* or *attuale*). For Gentile, nothing is real but the Spirit, and by the Spirit he means the pure act of self-conscious thinking. "The subject that conceives itself in conceiving All is the reality itself."[1] In the act of conscious thinking, the Spirit is present in its entirety as subject (*Io universale, transcendentale, assoluto*); generating therein by its own creative spontaneity a world of objects, and resolving the products of this act of objectification into the womb that gave them birth. In this immanent dialectic—pure subject (thesis), pure object (antithesis), subject-object (synthesis)—lies the rhythmic life-history of the Spirit. "Our doctrine," writes Gentile, "is the theory of the Spirit as act which posits its object in a multiplicity of objects, resolving their multiplicity and objectivity in the unity of the subject itself."[2] For such a doctrine, transcendence is the enemy, the Goliath whom Gentile has gone forth to slay. He confronts us, on almost every page of his writings, with an ineluctable dilemma. Either a philosophy of sheer immanence, or reality is unknowable. "An idealistic conception aims at conceiving the Absolute itself, the All, as idea, and is therefore intrinsically absolute

[1] *Teoria generale dello spirito come atto puro*,3 p. 206. All references, save where otherwise stated, are from this book, the most complete presentment of Gentile's philosophy. The Translation by Dr. Wildon Carr has been frequently used by the writer in quotations.

[2] P. 205.

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idealism. But absolute it cannot be, unless the idea coincides with the very act of knowing it; since—and this is the deepest source of the difficulty that besets Platonism—if the idea were not the very act by which it is known, it would leave something outside itself, and the idealism would thus far fail to be absolute."[1] To seek reality beyond the bounds of actual thinking—whether in the Platonic Forms, or in Kant's *noumenon*, or in the Nature of the scientist, or in the undiscovered Past of history, or in the God of religion—means a flight to empty mysticism, a blind worship of the *Ding an sich*. The admission of the transcendent at any point is tantamount to a betrayal of the inalienable rights of human reason.

It is not the purpose of this article to expound Gentile's philosophy in detail, but rather to indicate certain difficulties that bar the way to its acceptance. Yet, before we pass to criticism, we must note three characteristics essential to the main position. (i) The universal Spirit, which is the whole and only real, has its life in the thinking of the individual human subject, and nowhere else. It is the *Io universale*, the *νόησις νοήσεως*, not of Aristotle's transcendent deity, but of the God made Man in man's living effort to achieve self-consciousness. It is no impersonal mind, behind and beyond our human thinking, provoking to the problem, which Bradley pronounced insoluble, how the Absolute differentiates itself into a plurality of finite centres. What we call a finite centre reveals itself to its own thought as the one universal self-consciousness, which is apprehended as an empirical multiplicity of thinkers by virtue of its own act of self-diremption. The Spirit objectifies itself as a plurality of object-selves; but the empirical Ego, thus generated, proves on reflection to be an abstraction, clamant for resolution in the concrete unity of the universal Ego from which it sprang. The distinction of "I" and "thou" is real, in so far as such objectification is a necessary moment in the Spirit's dialectic; but there is no ultimate severance, for their unity is implied in every thought and word and deed. We have not to deduce the individual from the universal, or pass by induction to the universal from the individual, still less to deny the reality of the one in favour of the other; the universal *is* the individual, the individual *is* the universal, bare universality (Realism) and bare particularity (Nominalism) being alike abstractions from the concrete reality. Hence the world of objects (Nature) has no status of its own right. Spirit alone, the creator of all subjects and of all objects, is, as *conceptus sui* and *causa sui*, absolutely free; and the human thinker, in the living act of thinking, is free with the full freedom of the Spirit.

(ii) Reality, as the Spirit's act of self-creation (*autoctisi*), is a Becoming; and since Being implies fixity and the negation of process, nothing can truly be said to *be*. To assert of anything that it *is*

[1] P. 217.

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involves objectification and abstraction, the substitution for the act of thinking (*pensiero pensante*) of its inert and lifeless products (*pensiero pensato*) in the form of "facts" or "things." Such reality as is proper to these "facts" accrues to them only as moments in the rhythmic process of the subject that projects them by its own creative energy. "For idealism, if we assign to words their most vigorous meaning, there *is* neither a spirit, nor the Spirit; for *being* (*essere*) and *spirit* are contradictory terms, and a spirit (a spiritual reality, *e.g.* a poet or a work of poetry) by the very fact of being would cease to be spirit."[1] That which *is* falls outside the living process of thought as its static presupposition. Hence a metaphysic of Being, such as was Platonism *par excellence*, is *ex hypothesi* a metaphysic of transcendence. Spirit is subject, and not substance; Hegel's famous dictum in the *Phenomenology* being reaffirmed by Gentile with an enrichment of meaning of which Hegel hardly dreamed. His interpretation of the "pure act" of Spirit is drastic to the verge of paradox. There are living philosophers, notably M. Bergson and Professor Alexander, who tell us that spatio-temporal motion is thinkable *per se*, apart from a moving body as its bearer. Gentile asserts the like of Spirit. In lieu of the "passage of Nature," he teaches the "passage of Mind." Nought is but it becomes; "*verum et fieri convertuntur, verum est factum quatenus fit.*"[2]

(iii) It follows that, for Gentile, time is real; not, be it understood, the time of the objective order of chronological succession, but the time which functions as the diversity intrinsic to the Spirit's eternal act of unification. The life of the Spirit is through and through historical. Time and eternity are not opposites, nor is the one, as it was for Plato, the "moving image" of the other; they are more even than inseparable correlates: they are identical, and distinguishable merely as two facets of a single reality, like the convex and the concave of the curve. Without time there can be no eternity, without eternity no time. In this proffered solution of a secular problem in metaphysic, Gentile's thought touches its extreme of apparent paradox. The Spirit posits time and the temporal in an eternal present; nor is there other eternal beyond this act of self-creation. The sequence of historical events, viewed in their abstract multiplicity as data for the historian, yield a scene of chaos and unreason; viewed as his self-objectified thought, as the self-expression of the Spirit which is the principle of unity in difference, they reveal an "eternal theogony, fulfilled in the inmost heart of our being."[3]

On these principles, carried out into their applications with relentless logic, Gentile claims to have reconciled the historic antitheses of metaphysics. The one and the many, the universal and the particular, Subjectivism and Realism, necessity and freedom, *theôria* and

[1] Pp. 16, 17. [2] P. 16. [3] P. 237.

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praxis, value and fact, thought and things—all are resolved, as by the wand of a magician, into the unity of the Spirit which is the bond of peace. The effect on the reader is in truth somewhat bewildering. The method, in its simplicity and audacity, conveys the impression of an act of speculative *hubris*. But Gentile's system is not the easy outcome of dogmatic prejudice, but the garnered fruit of long and patient intellectual labour. His trenchant criticism of other philosophies, past and present, betrays in every line how he has himself wrestled with the difficulties which they strove, and strove in vain, to solve. Yet, when we are face to face with his final synthesis, and endeavour to grasp its relation to the substructure of reasoned argument, we have an uneasy sense of a chasm which the preparatory inquiries hardly avail to bridge. Can it be true, we ask, that this doctrine of pure immanence, with its ruthless denial of any presupposition limiting the activity of the thinking subject, and its identification of the Absolute with the individual thought of the individual human thinker, is the only alternative to Naturalism, the only safeguard for reason from falling into the clutches of Giant Despair? Can it be true, that if God (the object-God, *Deus sive Natura*) is, then I am not (not, *i.e.*, the free self I know myself to be, but a slave bound to the car of Juggernaut); while, if I am, then God (the universal Spirit) is none other than I? It is well, doubtless, to pause and reflect that Naturalism is a sorry refuge, and that faith in the transcendent is beset by many pitfalls, luring even the philosophic believer to reshape the world he strives to know in accordance with his own heart's desire. Gentile's teaching, at least, yields no honey to be carried off to the ecclesiastical hive. But are the members of the disjunction exhaustive? Is there no third possibility? Above all, is his own answer wholly untainted by the transcendence that it purports to exclude? It may be that, despite Gentile's disclaimer, the ghost of a mystical intuition still haunts the inmost sanctuary of his metaphysic

II

Let us look a little more closely into the basis of this philosophy. Gentile thinks. If he thinks, he must, as Plato long ago remarked, think something; let the something be—for he has been Minister of Public Instruction in Signor Mussolini's Government—a reform in the curriculum of Italian secondary schools. To the eye of the plain man, we have here a transitory incident in the official life of an Italian of a certain age, now seated at his desk in Rome, a single individual among a world of other persons and things, engaged on one among a host of possible mental avocations. An hour ago he was thinking of something else; an hour hence he will be thinking of something different again. But let the plain man ask Gentile for the true inter-

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pretation of his act of thought. He will hear with amazement that what seemed so trivial an incident in the day's routine was in reality the operation of the Absolute Spirit, immanent in Gentile's present act; that its object was, not the mere syllabus embodied on the typed sheet before him, but the whole universe, *il tutto*, immanent in the visible memorandum; that this universal object was nothing else than the same Absolute Subject self-objectified as the world of things; that in the individual thought, thus viewed in its truth, the transitory "now," the localized "here," with their entire spatio-temporal context, are gathered up into the unity of the Spirit's eternal present, and, as such, achieve immortality.

There is paradox here, assuredly, for the plain man; is there paradox also for the philosopher? It behoves us to be wary in our answer, for the far journeys of the philosopher have often led him to a haven which, for all its remoteness, has proved wide enough to afford a shelter also to the beliefs of the plain man.

For instance, it may well be true—and the plain man can be brought to see it—that every object of thought is so linked with every other object, that none is what it is in utter isolation, that in each there is in some sense involved the structure of the whole world. How else could we posit as the prius of all our scientific thinking that, not Nature only, but the universe, is a single system?

It may well be true, again, that the individual thinker is no bare unitary self, a monad without windows, possessor of a private world and of nought besides, but that there is that in all his thinking which in some sense transcends particularity, and bears witness to the immanent presence of universal mind. How else could he, in a simple act, say, of arithmetical thinking, compass a common and objective truth?

Once more, it may well be true that, save for an intimate affinity between subject and object, knower and known, the thinker could not grasp the object in the act of thought. An object unrelated to a subject would be unknowable, a thing-in-itself that was no object at all. Or, as Bosanquet has put it, there is a sense in which, in all thinking, mind makes itself one with the whole life of reality and affirms that all existence enters into and sustains its decree.[1]

There are many, doubtless, who would cavil at these admissions, at least in this summary mode of formulation. But they have been granted by philosophers of high distinction, and contain, on the face of them, nothing contrary to reason However, they are far from carrying us the whole way to Gentile's metaphysical conclusions. Leaving them therefore as they stand, we pass to consider the further and more daring principles which demand acceptance, if we are to follow Gentile to his goal.

[1] *Meeting of Extremes*, p. 20.

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The subject-object relation implies identity of the related terms. *Conoscere è identificare*[1]; in all knowing, knower and known are one. The object is not merely an object *for* a subject, but has its whole being in the being of the subject. Thought posits nothing "save what is radically identical with the thought itself."[2] In these words Gentile formulates what he regards as one of the main pillars of his system. The object is the product of the subject's creative art; as such, its reality consists in our knowing of it, and in nothing else. A reality other than the act of thinking it cannot be thought, and what cannot be thought cannot be. "To be posited for the subject (*pel suggetto*) without being posited by the subject (*dal suggetto*) is a contradiction in terms."[3] The thesis of a pure (abstract) subject apart from the object, and the antithesis of a pure (abstract) object apart from the subject, are alike resolved in the concrete synthesis, wherein the subject posits itself as object, and which alone is real.[4]

We must be careful not to misinterpret this principle, pregnant as it manifestly is with far-reaching consequences. It does not mean that the object is absorbed or annulled in the synthesis, in a night wherein all cows are black. The unity of the Spirit is not fact, but act; an act of self-recognition that creates and unifies its own diversity. In this process of unified diversification, of diversified unification, the many (the object) and the one (the subject) alike find their truth. Nor, again, must the subject in the synthesis be construed as the empirical Ego, to whose states of mind the Subjective Idealist reduces the objective world. That was Berkeley's error, which if we rule out Berkeley's unwarranted appeal to a transcendent God, is bound to land us in Solipsism. Gentile opens the first chapter of his *Teoria dello Spirito* with a reference to Berkeley's doctrine, as at once heralding and obscuring the truth that the *esse* of the object is in and for and by the subject's act of knowing it. The empirical subject, you as distinct from me, Berkeley as distinct from Gentile, whether thought as a plurality or as the single subject of the Solipsist, is no true subject, for it falls on the object-side of the relation "as one of so many finite objects which are the content of experience."[5] The true subject, for whom knower and known are one, is infinite, the universal Ego which can never be apprehended statically as an object-entity. Berkeley's idealism was empirical; Gentile's—adopting and clarifying the Kantian distinction—is transcendental.

That in the act of knowing knower and known are identical will be flatly denied by many philosophers on the very ground alleged by Gentile against every alternative doctrine, viz., that it involves an intrinsic contradiction. Knowledge, they will say, is not knowledge unless the object known is what it is known to be independently of

[1] P. 11. [2] P. 207, cf. p. 107, *"tutto in noi, tutto, cioè, noi."*
[3] P. 76, cf. p. 78. [4] p. 213. [5] P. 5.

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the act of knowing it. A knowledge that is creative of its object is not knowledge at all. Those who hold this view—and there are weighty reasons for its adoption—will straightway rule out Gentile's system as fantastical, and take no further heed of it. Others, conscious of the difficulties that beset both these extreme positions, will hesitate to commit themselves to either. Sensible of the manifest imperfections of human thinking, and strong in their conviction of the systematic unity of the universe, they will question whether any finite truth is wholly true, and whether, if knowledge be of the real in its independent being, knowledge is possible at all. Or they may hold that the distinction between thought and things is relative to finite consciousness, but loses all meaning on the plane of Absolute experience. In the divine *νόησις, νοῦς* and *νοητόν* are one and the same; God's intuitive understanding is constitutive of the being of its object, creating what it apprehends and apprehending what it creates in a single intellectual act. Formulated thus in the traditional language of Neo-Platonism, such a doctrine presents no inherent paradox. It bears a close resemblance to the very position of Gentile that is under consideration. But there is one all-important difference. What the Platonists affirmed of God, Gentile affirms of the individual human thinker. In the Ego's actual thinking the Universal Spirit has its immanent reality, *and nowhere else.* The Absolute is the *Io,* which is myself. By this identification, Gentile throws down the gauntlet in face of the apparent facts, and transfers to the human subject the divine prerogative of intellectual creation. We are thus brought face to face with the second, and crucial, principle of his metaphysic, the concept of the *Io universale.*

III

Gentile thinks. His thought, say, of the new syllabus of secondary instruction, when viewed by an observer from the outside, or by Gentile himself as an object of introspection, is one of a host of empirical facts that compose his mental biography. So regarded, it is an unalterable datum, set in a context of determinate conditions and consequences in the order of spatio-temporal events. It is *pensiero pensato,* a thought that has been thought. But in the act of thinking, *pensiero pensante,* it is an unconditioned creation of the Spirit, embracing all reality in an individual apperception, an eternal moment in the rhythm of the Spirit's life. In this unique moment Gentile and the Spirit are indissolubly one; the empirical object-ego and the empirical object-world are revealed as abstractions, as mutilated products of the *Io universale,* which alone really thinks. The question before us is whether this view can be maintained.

(A) It is not hard to see what Gentile hopes to gain by the concept of the *Io universale.* He is out to save the appearances, to vindicate

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human personality. He has no use for a superpersonal Absolute, to whom finite selves are adjectival, or for Mind with a big M, that transcends, while it inspires, the minds of human individuals. What is hard to see is the manner in which he effects this vindication; how the universal Ego can be an Ego, without either sacrifice of its own absoluteness or absorption of the empirical personality it is designed to save. Gentile's utterances on this question are far from clear. On the one hand, we are told that "it must not be supposed that the concept of this deeper personality of the Person that has no plural, excludes and in effect annuls every concept of the empirical Ego. Idealism does not aspire to be mysticism. The particular individual does not vanish in the bosom of the Ego that is absolutely and veritably real. For this absolute Ego, which is one and which unifies in itself every particular and empirical Ego, unifies indeed, but does not destroy. Rather, the reality of the transcendental Ego carries with it the reality of the empirical, which is conceived wrongly and illegitimately only when severed from its immanent relation with the transcendental Ego."[1] Here is unequivocal asseveration of the fact that empirical personalities are preserved, not lost, in the *Io universale*. How are we to interpret the mode of their preservation? Gentile thinks and Croce thinks; if these statements have any meaning, the otherness of Gentile and Croce and of their respective acts of thought must be maintained in the unity of the universal subject. Croce's thought cannot be Gentile's, nor can Gentile's thought be Croce's; otherwise Croce would simply *be* Gentile, and Gentile Croce, and their empirical Egos would "vanish in the bosom" of a superpersonal Absolute. It is not a question of preserving numerical or spatio-temporal distinctions as such; these have a place only in the abstract world of *pensiero pensato*. That sheer otherness is *aufgehoben* in the Spirit's life can be readily understood, for sheer otherness is an *Unding*, unthinkable even in the extreme moment of objectification, say, in the plain man's naïve assurance of an independent Nature. Even here the subject reveals its presence, not only in the unifying act of judgment, but in its recognition of unity in the very heart of the supposed objective fact. Sociality is found to characterize the empirical actions of men and animals, nor does the hypothesis of the bifurcation of nature preclude the discovery of physical law. *Pensiero pensato*, for all its abstractness, is *pensiero* still. But, on the plane of *pensiero pensante*, what room is there for any otherness save that of the moments in the Spirit's triadic rhythm? "The other," we are told, "is simply a stage which we must pass, if we are to obey the immanent nature of our spirit; pass, but not stay there." "*L'unità dello spirito è immoltiplicabile.*"[2] True, "it is only an abstract multiplicity which is thus excluded by the unity of the Spirit, since that

[1] P. 13. [2] Pp. 11, 23.

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unity is itself multiplicity, a concrete multiplicity displayed in the unity of the spiritual process."[1] What then is this concrete multiplicity? Surely the multiplicity of thinking minds and acts of thought. So we read that the *Critique of Pure Reason* can be regarded as "a single spiritual act"[2] in contrast with its empirical location in its temporal context as an historical event; that in the poet of the *Orlando Furioso* we discern two men, the one, "an object of æsthetic criticism, which contemplates in Ariosto the eternal beauty of his art," the other, "an object of historical criticism, which contemplates in Ariosto the fact, conditioned in time and space, and intelligible, like all other facts, in relation to its conditions."[3] Yet, in another passage, Gentile denies that one act can be compared with another, for no act has an 'other,' and asserts that "one knowing (*sapere*) can only be distinguished from another by analysis and abstraction."[4] "Horace, as a man who was born and died, is dead indeed; his *monumentum* arises in us, in a 'We' (*Noi*), who, as 'we' or subject and immanent act, are not different from that of Horace."[5] Indeed, it is difficult to see how it could be otherwise; if thinking be judgment, and judgment be unification of differents, the thinker can think only as the transcendental, never as the empirical, Ego. There can be only one thought, one judgment, to which all diversity is internal, viz., the thought and judgment of the universal subject. Gentile, as Gentile, never really thinks. The intrusion of the '*Noi*' is intolerably ambiguous. *Io* I know, and *Sè* (the self-objectification of the *Io*) I know; but who are 'we'? Gentile and Croce, in the act of thinking, are one person, "the person that knows no plural." The identification, be it observed, must be complete; else the Spirit is transcendent of the act of thinking and has lost its title to the name *Io*. Yet, if complete, what difference remains between this act of Gentile's thought and that of Croce's? Thoughts which are identical with the same thought are identical with one another.

The same confusion may be illustrated from Gentile's analysis of art.[6] Art, we read, is "knowledge of self," the thesis in the dialectic of self-consciousness taken in abstraction from the antithesis, the moment of pure subjectivity in the Spirit's life. The artist recks naught of the limitations which respect for the objective order imposes on the historian. His world is the subjective world of fantasy, a free creation in which he realizes his immediate feeling. Gentile quotes with full approval Croce's well-known doctrine that all art is in its essence lyrical. We may remark by the way how, on Gentile's principles, it seems to follow that the Subjective Idealist is a supreme

[1] P. 94.

[2] P. 225. Cf. the twofold *alterità*, outside of and within the Spirit, that differentiates "history as Nature" from true history, pp. 222–225.

[3] P. 173. [4] P. 226. [5] P. 129. [6] Pp. 187–192.

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artist. However that may be, the work of art has its distinctive value as the revelation of the artist's personality. Here arises the question, which personality, the empirical or the universal? "Under which king, Bezonian? speak or die." We are told that "every work of art is a self-contained individuality, an abstract subjectivity, which stands empirically in juxtaposition to all the rest in atomistic fashion. Every poet has his own æsthetic problem, which he resolves on his own, withdrawing himself from every intrinsic relation with his successors and contemporaries." This is why art as art has no history. The language points to art as being the creation of the empirical personality of the artist. But that is not Gentile's view, for he insists on the character of impersonality which lifts the work of art to immortality and gives it its appeal to all spirits in all ages as "the very universality of the spirit as *Io transcendentale*," and adds with great explicitness, "the personality that must be excluded from art is the character rather of the empirical Ego, of the Itself (*Sè*) in its withdrawal of itself from the perfect light of self-consciousness, which, on the contrary, must in art prevail in all its dazzling power." How then, we ask, is Ariosto's poetry Ariosto's, or Leopardi's poetry Leopardi's? And how, if the work of art be created "in the perfect light of self-consciousness," is the artist to be differentiated from the philosopher?

As we follow Gentile's exposition of the *Io universale*, we are reminded how Aquinas, in his polemic against the Averroist doctrine of the unity of the Active Intellect, presses home with merciless insistence its necessary consequence, viz. *Socrates non cogitat*. Like Gentile, Aquinas was concerned to champion the claims of human personality; but, unlike Gentile, he saw clearly their incompatibility with a philosophy of pure immanence. He saw also that such a philosophy was bound to sap the foundations of moral responsibility. So, for Gentile, "on the *terrain* of experience, all our moral problems arise, precisely through the absolute opposition in which the Ego, empirically regarded, distinguishes itself from all other persons"[1]; though, as he goes on to point out, they admit of solution only on the plane of transcendental personality. But a discussion of Gentile's views on ethics would carry us beyond the limits of this article.

IV

"(B) Like difficulties present themselves, when we turn to consider the object-factor in the synthesis. The *Io universale* is, not subject + object, but subject — object in a union that can only be broken by abstraction. The subject is not the pure subject, the bare One, self-contained and transcendent, of Neo-Platonism, but the act of unification of the manifold; the object is not the pure object, the

[1] P. 12.

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sheer multiplicity that the Atomists strove vainly to conceive, but the manifold taken up into the act of unification. Yet, for all his protestations to the contrary, Gentile weights the subject-factor in the synthesis heavily against the object. "The multiplicity of the concepts of things can be but the superficial husk of a kernel that is one concept only, the concept of the subject as centre of all the things."[1] Why, indeed, is the synthesis ascribed to the *Io*, if not to mark the primacy of the subject, in its real identity with the human individual who thinks? We read, it is true, of '*il mondo assoluto*,' or '*il tutto*,' of 'the *Sè* or *Io*'; but the emphasis is ever on the *Io* rather than on the *Sè*. "It is not possible to conceive thought without personality, because thought . . . is *conceptus sui, i.e. Io*."[2] "But," Gentile continues, "it is not possible to conceive the thought that has not its bound or *point d'appui*, because the concept of itself realizes the *Sè* as object of the knowing."[3] Why then does he not speak of *Dio universale*? God, for Gentile, is the apotheosis of the object-world in its abstraction; in religious adoration, the Ego proclaims its nothingness in the presence of the non-Ego, thought is petrified before the vision of the Medusa-head of unthinking Nature. We are not here concerned with the truth of this analysis of religious experience, though the moment of self-fruition is surely as vital as that of self-abasement; or with its paradoxical implication that the God of religious worship is identifiable with the hypostatized Nature of scientific realism. Our point is that on the plane of the concrete synthesis *Io* and *Dio* are alike one-sided abstractions, and that Gentile is not entitled to describe the life of the Spirit in terms of one rather than of the other. His preference for the word *Io* blurs the true meaning of his doctrine, that the Spirit is in reality *Io-Dio*, the God making himself Man, the Man making himself God. A like emphasis is laid upon the subject as against the object on the empirical plane. The empirical *Io* gives a clue to the recognition of the transcendental *Io*, in a way that has no analogue on the side of the empirical object. As a pure manifold, the object is wholly unthinkable; whereas the empirical subject is *pensiero*, and preserves its truth *as such* in the unifying synthesis. Moreover, even when objectified, it is *thought* as *pensiero pensante* (*i.e.* as thinker); and thus there arises, within the object-world, a distinction between percipients and *percepta*, between persons and things. The matter is full of difficulties, which we cannot here discuss in detail. Chief among them is the problem of space and time. The object-world is a world of (abstract) multiplicity, and "whoever says multiplicity, says therewith space and time." "All that we distinguish or are capable of distinguishing, and therefore of positing, in an actual experience is spatial." Space, for Gentile, implies "the reciprocal exclusion of all the terms of actual or possible

[1] P. 206. [2] P. 213. [3] *Ibid.*

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experience."[1] Time, on his view, is a further "spatialization of the unity of space," a "specification of spatiality"; for reciprocal exclusion (spatiality) breaks out within the unitary spatial element, *i.e.* the point, which can only be thought as one, if thought as persisting through a multiplicity of instants.[2] It follows that the empirical Ego is not merely temporal but spatial. The thought which is not spatial is that of the universal subject. "It is to be observed that we are not in space and time; rather space and time, all that is spatially displayed and is graded in temporal succession, is in us: in the Ego, be it clearly understood, which is not empirical, but transcendental."[3] This application of the doctrine of simple location to consciousness widens the gulf that parts the empirical from the universal self. It raises the question whether both alike are not ideal limits, between which hovers ambiguously the actual self which thinks. Gentile's theory furnishes an interesting illustration of the "meeting of extremes" of Absolute Idealism and present-day Realism, with its insistence on the integration of time and space and on the view that the basis of consciousness is to be found in spatio-temporal reality. We note, also, the implied criticism of Bergson's *durée réelle*; since, for Gentile, abstract time is resolved, not in empirically lived duration, but in the "eternal present" of the pure act, that posits time and space as its creations. Postponing for the moment Gentile's concept of the eternal present, it is hard to understand the process of resolution. If time be unthinkable and utterly unreal, the sheer negation of spirit, how can it maintain its rights in the act of synthesis? Gentile's answer, that the Spirit as becoming contains within itself its own negation, raises a fresh difficulty, which will have to be considered presently, namely, how what is purely negative can function constructively in the dialectical process and enter as a positive constituent into the life of the Spirit. In any case, the position that the world of facts and things is sheer nonentity, except for what it owes to the thinking subject, while following logically from Gentile's principles, is hardly reconcilable with the existence of a scientific knowledge that claims to build upon that world as a reality. If nothing is, save the becoming of the Spirit, how did the illusory belief in the independent being of Nature ever arise? Philosophies of pure immanence have a way of relegating to the realm of appearance what, on their theory of reality, could never conceivably appear. The truth is that Gentile's *pensiero pensato* corresponds to nothing in our actual thinking of the world of objects. Thought is never purely analytic and tautologous, but retains its intrinsic nature as synthetic even in its apprehension of scientific or historical fact. Moreover, when we turn to consider the synthesis and hold fast to the element of otherness and of the non-Ego as genuinely

[1] Pp. 98, 99. [2] Pp. 101, 119. [3] Pp. 99, 107.

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preserved, the Spirit is as truly fact as it is act. Gentile's theory is, strictly, not a theory of the Spirit as pure act, but of the Spirit as pure act-fact, *Io-Dio*. In each pair of appellations the members are more than coequal with one another; they are identical. The All (*il tutto*) is, or rather becomes, the subject, as the subject becomes the All. "*Tutto in noi, tutto, cioè, noi.*"[1] Hence, as the subject is one in all acts of thinking, so the object-world, in its truth in the unity of the subject, is one also. There is no place left for the distinction of one branch of knowledge from another. When Gentile identifies philosophy and history with history of philosophy as the mediating term, understanding by philosophy thinking in its concrete development and by history the concrete development of thinking, he does more than deny the severance of the study of fact from that of value; he merges the two disciplines in one. How, on the grounds alleged, can he resist the identification of all the sciences in that of philosophy-history? He allows, it is true, a real distinction, arising directly from the Spirit's dialectic, between art, the expression of the pure subject, science and religion, the expressions of the pure object, and philosophy-history, the expression of the subject-object unity. Over and above the manifest arbitrariness of the several identifications, the doctrine implies denial of an independent status to art and religion, which call for resolution in philosophy-history, the only form of knowledge that is completely true. Certainly in absolute and perfect knowledge, if knowledge it be called, all these distinctions would be completely unified. But such knowledge is not that of finite thinkers. "Such is not our rank and condition." Gentile, however, thinks otherwise, and the result is the paradox in question. In the end, as all thinkers are one thinker, so all knowledges are one knowledge. Where the All thinks the All, and the One the One, it is idle to draw invidious distinctions.

V

(C) Consider next the movement of thought by which consciousness comes to itself as self-consciousness. Gentile tells us that this ascent has to be made laboriously; in the *ordo cognoscendi*, at all events, the *Io universale* is not immediately given, but is to be found only by those who seek. Moreover, were it given, there would be no room for the empirical *Io*; all thinking would be transacted directly by the universal *Io*. What, then, is the *prima facie* datum from which we start, and which is revealed to subsequent reflection as no brute presupposition, but as a moment in the dialectic of the Spirit? It should surely be the moment of pure subjectivity, the thesis in the triadic rhythm. But we have seen that the empirical Ego, the

[1] P. 107.

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supposed datum, never really thinks; that it falls, even as empirical subject—the *percipiens, e.g.*, of Berkeley's Idealism—within *pensiero pensato*, as one among an indefinite multiplicity of finite objects. Moreover, men do not in fact embark on their philosophical pilgrimage as uncritical Subjectivists; their starting-point is rather the antithesis, the belief in the independent reality of the object-world. The immediate datum is the empirical Ego as it finds itself in presence of empirical objects. In either case, they are victims of abstraction, and Gentile asserts emphatically that "from the abstract to the concrete there is no passage."[1] "It is not the thesis that renders possible the synthesis, but contrariwise the synthesis that renders possible the thesis, creating it together with its antithesis, *i.e.* creating itself. And therefore the pure act is self-creation (*autoctisi*)."[2] Gentile is of course speaking here of the real order of becoming, not of the empirical *ordo cognoscendi*; but the difficulty lies precisely in this, that his epistemology and his ontology inevitably and unaccountably diverge. Take the real process: it falls wholly within the unity of subject-object, which is present implicitly, first in the thesis, then in the antithesis, and achieves explicit recognition in the synthesis. Thus all is deduced from self-conscious Spirit; when being has been resolved into becoming, we see, in Lotze's quaint expression, "how being is made." But, since the entire process is that of human thinking, how else can it be exemplified save as the manner in which men actually come to know? Nor is the converse process, from the concrete to the abstract, any easier to understand. How can thought, of its own nature, posit a pure object which is thought's negation? And how can thought recover from this act of self-abandonment and achieve a thinking that is a synthesis of thinking and non-thinking? The synthesis can hardly be identical with one of the terms synthesized, nor the thesis and the antithesis at once be identical with and opposite to one another. Gentile's criticism on Hegel's famous first triad surely recoils upon himself.[3] The confusion is only disguised when the thesis is stated as the pure subject, the antithesis as the pure object, the synthesis as subject-object in their unity. For what is the pure subject of the thesis? If it be the empirical subject, this, we are told, is a denizen of the object-world, falling under the antithesis. If it is the *Io universale*, it is identical with the subject-object of the synthesis. Thus *pensiero pensante* is either the self-consciousness of the Spirit or a misnomer for *pensiero pensato*. Gentile will doubtless reply that this is to misinterpret the dialectic in terms of static moments and to forget that reality is not Being, but Becoming.

[1] P. 219.

[2] *L'atto del pensare come atto puro*, p. 41, cited by de Ruggiero, *La filosofia contemporanea*, 2nd ed., ii, 171.

[3] Pp. 46, 47.

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The synthesis is in the making at each stage of the process, and is never wholly made. The *Io* is ever achieving self-realization, but its goal, pure *νόησις νοήσεως*, is nowhere achieved. "There is no felicity save in proceeding." To think finality is to think—were such a thought thinkable—the Spirit's death. Let us follow out the implications of this doctrine. They are set forth with uncompromising assurance in the sixteenth chapter of the *Teoria generale*.[1] The Spirit is real only through the presence within itself of its own negation. Non-being, error, and evil are the nutriment from which it draws its life. "Without error there would in fact be no truth, without evil no good, . . . because error and evil are the non-being of that Spirit, which is indeed truth and goodness, but on the condition that it makes itself, conquering this its internal enemy, consuming it, and hence ever needing it to conquer and consume, as the flame has need of the combustible."[2] Thus the problems of error and evil are the same as that of Nature; they reflect the moment of objectivity, and, like Nature, are taken up into the unity of the Spirit. The realm of disvalue, be it noted, coincides exactly with the realm of fact. In this process Gentile sees a triumphant progress, the instauration of the *regnum hominis*, the kingdom of man. It furnishes "the empirical and external representation of the immanent eternal victory (full and absolute victory) of the Spirit over nature."[3] Can we endorse this panegyric without qualification? Is it not, with equal truth, a representation of full and absolute defeat? The life of the Spirit is no more true than false, no more good than bad. Truth and error, goodness and evil, are alike essential to its becoming, and, in the synthesis which is reality, are alike conserved, not merely as correlatives, but as self-identical. "Error is error," says Gentile, "in so far as it is overcome."[4] But the like holds also of truth. Were error to vanish, truth, so far from shining forth in untarnished splendour, would have perished for lack of proper nutriment. Where then is intellectual progress? Nor is moral progress in better plight. If goodness be goodness solely through its self-creation of evil, what sense can we attach to the assertion of man's "infinite responsibility" for the use he makes of the Spirit's gifts?[5] The pretended progress is but a stream of cyclical recurrences, wherein advance alternates endlessly with retrogression, the temporal reflection of an eternal act.

What is this eternal act? It is an act in which the whole series of events in time are gathered up and transmuted as "compresent in the temporalizing act of the Spirit."[6] "Compresence is the convergence of all the moments of time (past, present, future, in their infinite distinctions and resulting multiplications) in a *present*, which is no longer a present stationed between past and future, but negation of

[1] Esp. pp. 208–212. [2] Pp. 210–211. [3] P. 214.
[4] P. 209. [5] P. 216. [6] P. 109.

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all temporal multiplicity and all succession."[1] A negation, be it understood, which is also affirmation; for the eternal is not other than time, including and transcending it, but is "time itself considered in the actuality of the Spirit."[2] The *storia eternale* is identical with the *storia* which unfolds itself in time. As we read this language, recollections of Hegel and Spinoza, and, beyond these, of mediæval Platonism, crowd upon the mind. It is of vital importance to grasp clearly what is distinctive in this, the crowning conception of Gentile's Idealism. The temporal process is not (*a*) a progress *ad indefinitum*. For Gentile, as for Bradley, "endless progress is progress without an end, is endless incompleteness, endless immorality."[3] But neither is it (*b*) the progress which Bradley, following Hegel, advocates as rational, the progress "to an end which is completeness" and which abides above and beyond time. Such a consummation would involve transcendence. Gentile's progress is (*c*) synthesized in an "eternal present," which, as act of the Spirit, is itself a process and a history, which itself 'becomes' and never 'is.' Thus all history is contemporary history, and exists only in the historian's (*i.e.* the philosopher-historian's) act of thinking it. It is meaningless to speak of the unrecorded past, for the past as such is non-existent; to ask, What really happened? is to start on the vain quest of the *Ding an sich*.

Can we attach any meaning to this doctrine? It is true that the distinction of fact and value breaks down upon reflection, and with it the severance, save for purposes of scientific economy, of history from the philosophy of history. It is true, again, that the distinction between philosophy itself and history is, like every other distinction among branches of knowledge, relative to finite human thinking. Once more, it is true that the whole matter of history is, in a sense, compresent to the mind of the historian who thinks it. The undecipherable inscription, even the unrecorded past, is envisaged by him as such, and is *thus far* neither undecipherable nor unrecorded. But this is not to assert, with Gentile, that the act of knowing is identical with the object known. The facts are not rendered unintelligible by a refusal to accept this revolutionary principle. They may be real beyond his thinking of them, and yet, as falling within the Spirit that transcends the individual subject and embraces all subjects and all objects within its scope, may be flesh of his flesh, life of his life. And there are further difficulties to be met. By what effort of thought can we conceive the future—to say nothing of the past—as comprised within the Ego's present act of knowing? Let the 'present' be as timeless as you please, is it possible to exclude plurality of acts from an eternal present that is all-inclusive of reality? Again, if the eternal act is a history, can it be other than an event? Yet an event that is timeless, as occupying the whole of time, is surely incon-

[1] P. 110. [2] P. 177. [3] *Ethical Studies*, 2nd ed., p. 235 *note*.

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ceivable. Does not the eternal present prove on consideration to be not eternal, but momentary, the apotheosis of a single temporal instant? And, lastly, what value can we attach to an experience in which reality, truth, and goodness are eternally to be made, unmade, remade? In the eternal act value and disvalue alike enjoy full prerogatives, through a synthesis which, being both, is really neither.

VI

(D) The *Io universale* is pure thought, and as thought is translucent to thought; it is, in a word, self-consciousness making itself explicit to itself in its own act. Moreover, its act is the act of my actual human personality. How then can I fail to know it through and through? Gentile's philosophy, if it stands for anything, stands for the repudiation of the unknowable. So we are told again and again; and philosophy after philosophy is arraigned at the bar of this tribunal and found guilty of harbouring the *Ding an sich*. Even Hegel, when he passes from the Idea to Nature, discloses his secret complicity in the crime. Gentile alone is uncontaminated, for he proclaims not merely that all reality is knowable, but that all reality is known. Is he justified in this high claim? or does it break down under examination? Can he confront the world with a clear conscience? Has he not dethroned the *Ding an sich* from its secular lordship over other speculative systems, to establish it, under the name and style of the *Io universale*, as sovereign in his own? This final question remains to be answered. We must bear in mind that the issue cannot be determined by his bare assertions, but by their coherence, one with another and with the governing principles of his philosophy.

If the *Io universale* is knowable, it can be known; and how can it be known? Not immediately, as we have already seen; and Gentile is never weary of polemic against the intrusion of immediacy. Nor by mediate inference, for "from the abstract to the concrete there is no passage." If it be a conclusion from premisses, it must be capable of formulation as a proposition. But the moment this is done, it ceases to be an act of *pensiero pensante* and falls within *pensiero pensato*. To think it, that is to say, is to think it, not as itself, but as an object. It is offered for our acceptance as a concept, as the sole concept; but the pure act is not a concept, nor is any concept the pure act. As pure act it defies resolution into fact; try the rash experiment, and its indignant protest rings clear and loud: "Is thy servant a dog that it should 'be' this 'thing'?" It cannot, then, be known. "To know is to distinguish one thing from another: *omnis determinatio est negatio*."[1] All knowledge implies objectification; knowledge of the *Io universale* is knowledge; therefore knowledge of the *Io universale*

[1] P. 27.

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implies objectification. But, being pure act, the *Io universale* transcends objectification; it therefore also transcends knowledge.[1]

We may state the matter thus: Reality (the act of the self-conscious subject) is not the knowable (objective fact), and the knowable is not the real. Yet the whole purport of the system is to establish their identity, to resolve the object, which as static Being is unreal and unknowable, in the act of the subject which is both knowable and real. But the act of the subject can be known only through objectification, which destroys at once its knowability and its reality. Subject, object, and their synthesis are thus alike unknowable; and the sole fruit of the immanent dialectic is the act of faith which affirms "not three incomprehensibles, but one incomprehensible." Thus does Gentile's metaphysic suffer shipwreck on an inward inconsistency. There can be no "theory" of the Spirit. The title of his book—*Teoria generale dello Spirito come puro atto*—is a contradiction in terms.

Let us turn to what he has to tell us of the manner in which the pure act is apprehended. It must be lived in order to be known. Throw yourself, such is his exhortation, into "the living experience of the spiritual life"; then, and then only, will you grasp its nature.[2] Then, and then only, abstractions dissolve, "and the dialectic of the real will appear evident and certain, as is evident and certain to each of us the consciousness of that which thinks."[3] The vision of spiritual reality is penetrable to the eye of faith.[4] "What is the import of this unity," he asks, "this fellow-feeling, which is the condition of all spiritual intercourse, *i.e.* of the knowledge of the Spirit, so different . . . in kind from that of simple, so-called material, Nature? We must make ourselves one with the soul we desire to know, . . . and that soul can only meet within our soul what is its own proper subjectivity; as life of our life, where, within our soul, distinction involves nothing that opposes it."[5] It is apprehended, not by discursive thinking, but by intellectual intuition, hardly to be won in face of the allurements of popular and scientific abstractions; an "intuition of the spiritual life, wherein in its most living moments it finds a standard and an inspiration to science and to virtue, which, as they fill the soul the more, cause to vibrate more strongly the tense chords of our inward energies."[6]

In the closing chapter of the *Teoria generale*, entitled "*Idealismo o Misticismo*," Gentile directly confronts the charge of mysticism. His friend Benedetto Croce had objected that in the immediate intuition of the individual-universal all distinctions vanish, and that the issue is a mysticism "admirably adapted to the feeling of oneself in unity with God, but ill suited to thinking the world and acting in it."[7] If, on the other hand, the factor of diversity be conserved, the simplicity

[1] P. 27. [2] P. 22. [3] P. 48. [4] Pp. 7, 21.
[5] Pp. 7, 8. [6] P. 23. [7] P. 227, *note*.

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of the pure act is shattered into fragments. Gentile replies by denying the immediacy of self-consciousness and reasserting the reality of the differences which it posits by its act. "Idealism," he writes, "resolves all the distinctions, but does not, like mysticism, cancel them; it affirms the finite no less resolutely than the infinite, difference no less resolutely than identity."[1] As we have shown above, it is difficult to substantiate this assertion. For additional confirmation of our criticism, we would point to Gentile's admitted failure to give positive characterization to the act of the Spirit. "All the attributes by which we distinguish the Spirit lead us, even against our will, to substantialize it." It resists every attempt at definition; for to define is to petrify, to translate mobility into immobility. "How can we define and conceive the truth, without imprisoning it in a form that is limited and circumscribed?" And, once again, "The unity of the Spirit, which lives in such an intuition, has been noted more or less clearly by all philosophers, but never, perhaps, precisely expounded in its real nature: *unità immoltiplicabile è infinita.*"[2] *Not* multiplicable, *not* finite, *not* any assignable attribute; what have we here, in the last resort, but the time-honoured *via negativa* of the mystics?

We are not discussing on its merits the claim of intellectual intuition to rank as a form of knowledge, or even suggesting that mediate thinking avails of itself to reveal the truth about the real. Reason is a wider term than ratiocination, and within its field has room for the vision of speculative imagination. All along the ages philosophy has found itself impelled, as the consummation of its intellectual labour, to posit a unifying principle that transcends logical mediation. Such was the One of Neo-Platonism, the source of all being and of all value; such, again, was the Infinite Substance, the *Deus sive Natura*, of Spinoza; objects, in both cases, apprehensible by no mere discursive processes, but by an *amor intellectualis* that is an act at once of reason and of faith. Such also, as we have seen, is the *Io universale* of Gentile. But, if it be such, the admission of immediacy is fatal to the main purpose of his system; for it involves the admission of the transcendent, and the transcendent is precisely what Gentile claims to have destroyed.

VII

The root of all the difficulties above mentioned lies in Gentile's identification of the Spirit with the present act of human thinking. The universal cannot be equivalent to now this, now that, among its particulars. Immanent in each, it must yet, as universal, transcend each. Gentile would doubtless repel this criticism as a travesty of his doctrine; but we believe that, for all his protestations to the contrary, it is unanswerable. In his *Meeting of Extremes*, Bosanquet distinguishes, with reference to Gentile, two forms of transcendence,

[1] P. 228. [2] Pp. 21–23.

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which he calls respectively transcendence of immediacy and transcendence of experience. Gentile denies both. Whether a sound philosophy of the Spirit involves transcendence of experience, whether, as Platonism maintains, the supreme Reality, while immanent in, is yet above and beyond the universe and the finite minds that are therein, is an issue that lies outside the scope of this paper. Our contention has been that it implies transcendence of the immediate act of thought. The Absolute of Hegel or of Bradley may not prove to be the last word in metaphysics, but at least it can hold its ground against the *Io universale* of Gentile.

That there is truth in Gentile's analysis, if we confine ourselves to the actual facts of human knowing, is undeniable. Man's thinking life, as we find it, is ever incomplete, his knowledge riddled with ignorance, his truth with error. In his moral life, likewise, right is done and goodness realized in and through the conflict with evil. But can we ascribe these features of finite experience to the ultimate reality? That the sorry strivings of our own thought and will reveal the inmost heart of the universal Spirit, the essence of its self-conscious life; that the only Absolute is that whose absoluteness consists wholly of this Maelström of relativity; this is a doctrine indeed which, if credible, would present a hideous mockery of our aspirations. The price to be paid is heavy, yet, if the theory be true, it must be paid without demur. The only relevant criticism is that it proves on examination to be unintelligible. We have seen that Gentile fails to explain the relation of the empirical to the universal Ego, or to give a clear answer to the question: who, in this concrete act of thinking, can truly be said to think? We have seen, again, that he fails to show how multiplicity, the mark of the object, is preserved in synthesis with the subject, or to justify our accredited knowledge of the objective world. We have seen, further, that he fails to account for the dialectic process, the passage of thought from thesis to synthesis, and *vice versa*. The empirical Ego realizes itself as the universal Ego; but the former is a static object, unthinkable and unreal; the latter an ideal whose realization would be its death. The living thinker is left, circling restlessly, like a squirrel in a cage, between two abstractions, "one dead, the other powerless to be born." Finally, we have seen that the pure act, which, as the self-conscious Ego, was to reveal itself as the self-luminous truth of all our thinking, veils itself, as we draw near to grasp it, in a cloud of mystery. If this be the issue of the new Idealism, have we not some cause for hesitation in yielding it our allegiance? Self-realization cannot be the final word in metaphysics. May it not be wiser to follow the more beaten track of those who teach that man's spiritual endeavour can only be understood, if it be found to draw its motive and its meaning from a reality that transcends the process of becoming, and therewith transcends the self?

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THE CASE FOR EMERGENT EVOLUTION

PROFESSOR C. LLOYD MORGAN

i.

THE word "emergent" was suggested by George Henry Lewes[1] for specialized use in contradistinction to "resultant." Little came of the suggestion, so far as I know, for some forty years.

All that Lewes had to say on the matter is comprised within half a dozen, or at most eleven, pages, at the close of a long-winded, but at that time not negligible, discussion of Force and Cause, and is preceded by a section on Hume's Theory of Causation. This leads up to the statement: "There are two classes of effects markedly distinguishable as *resultants* and *emergents*." Even here there was nothing new save in the adoption and adaptation of the word "emergent" in place, let us say, of John Stuart Mill's "heteropathic effects."

Apart from some discussion[2] on "the interpretation we must put on the conception of our sensations as signs or symbols of objects," the relevance of which to the "two classes of effects" is not very obvious—in which, moreover, the word "emergent" does not occur—there is a pretty meagre account, or perhaps one should say bare mention, of some long-familiar features of chemical compounds. Wherein, then, lies the grain of wheat that was some day to germinate? What Lewes urges may, I think, be reduced to this: There is something more in the constitutive character of a chemical compound as a product than can be deduced from generalizations based solely on the observable behaviour of its components taken severally. He suggested that this something more should be called "emergent"; and he contended that this something more can only be disclosed by observation of what actually happens. One may know what will be the effect of heat on this, that, and the other component as such; but this will not enable one to deduce what will be its effect on the product when these components are allied in some specific mode of chemical combination. *That* one must learn through observation and experiment. *That* is emergent.

"It is," he says, "precisely because effects are mostly emergents that Deduction is insecure, and Experience is requisite to confirm even the most plausible deductions." "Who," he asks, "before experiment, could discern nitric acid in nitrogen and oxygen?" One

[1] *Problems of Life and Mind*, 2nd Series, 1875, p. 412. [2] Pp. 416–422.

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supposes the answer he would give is: "No one." But, if so, is this "discernment," when it comes, the "confirmation" of deduction? Lewes replies that after all it may be. For "it is no extravagant hope that the day will arrive when we shall not only know the separate operations of [component] agents, but their mutual modification in the product which emerges from their union." In that event, however, will the claim for emergence be any longer tenable?

That is where Lewes left the matter. I have tried to state his positive claim that some effects, to be called "emergent," are *not* deducible, without slurring over the hope he expressed that "some day" it may be shown that they *are* deducible.

This only need be added to render clear the position as I see it. Lewes dealt with events at two levels: at a lower level, that of the behaviour of components; and at a higher level, that of the behaviour of products. He says, in effect: There is somewhat in the behaviour of product-events at the higher level that cannot be deduced from generalizations based solely on the behaviour of component-events at the lower level. But he then adds that some day we may frame what one may call "both-levels" generalizations. On the basis of these more comprehensive generalizations the nature of the product will, we have reason to hope, be deducible. The point here is that since the wider both-levels generalization *already includes* all that observation has then disclosed in the behaviour of the product, from this wider generalization all the effects are deducible.

I do not say that Lewes drew the distinction thus briefly indicated. But I think we may do so; and I think we should ask how far this covers what he meant. It may be asked too whether *we* may not do well to reserve the word "emergent" for somewhat (to be duly specified) observable at the higher level of products which is not deducible from aught that is given at the lower level of components only.

But we are going ahead too fast, or at any rate looking ahead too far. At any rate Lewes did suggest the word "emergent." It was to imply "in some sense not deducible." This word is now in use with a like if not quite the same implication. And yet I venture to say that not for something like forty years was the word closely connected with a live issue. How was this? How came it that not till then did it become a centre of controversy? This is a bit of history. I can only give a brief impressionist sketch with a touch, or more than a touch, of personal reference—permissible, I trust, under the circumstances.

ii.

Seeing that Lewes dealt with Problems of Life and Mind, it is surprising how little use (if any) he made of his concept of emergence.

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In the reams he wrote on physiology and on psychology the word "emergent," so far as I remember, does not occur. Opportunities for its introduction there are in plenty.[1] He seized none of them. It seems, then, that, for his main purpose, he dealt with emergence as applicable only in the province of chemical inquiry, or at any rate failed to show in what way it may be applied elsewhere. But what he sought to express in matters chemical was already adequately expressed by chemists in other terms. If *they* found no use for the word, who else was likely to feel any call to accept it?

Now before Lewes wrote, and after, there were many who said to themselves: Something new in any chemical product, something nowise deducible from the "laws" of its components—Yes. But nothing new in the same sense elsewhere? Nay rather, throughout nature from bottom to top, again, and again, and yet again, something surprisingly new, putting in an unexpected appearance *as new*. The difficulty is to earmark the many instances and arrange them in systematic order. We need, such folk said to themselves, a name for *anything* new in this sense. What shall it be? As one of those who felt this need in 1894, I used the expression "selective synthesis" for that which disclosed "a new departure" in nature. The word "emergent" was not then in vogue, some twenty years after Lewes had suggested its use.

Meanwhile, say 1889–1907, M. Bergson arrives on the scene. In his works the emphasis on something new, at any rate in the affairs of life and mind, receives due and reiterated emphasis. But for him the salient question was: *To what is this due?* His reply is: To Life or Mind. It was not likely, then, that he or his followers would find any use for the word "emergent" in Lewes's empirical sense. For that would imply that the living organism no more demands an *élan vital* for its explanation than does a drop of water demand an *aquasity* to which it is due.

Time passed. Bergson's chief works, including *Creative Evolution*, were translated into English in 1910–11. Driesch's Gifford Lectures, embodying his doctrine of Entelechy, were published in 1908. I think that it was during the next few years, say from 1910–15, that the word "emerge" began to creep into philosophical literature. What it meant had to be gathered from the context. And apart from a savour of something new, generally under "creative" explanation, one could not extract much that was philosophically definite.

But in 1920 came Professor Alexander's *Space, Time, and Deity*.

[1] For example in *The Physical Basis of Mind* (1877), as republished in 1893, p. 95. The whole argument here is in support of what Mr. Broad calls "emergent vitalism"—of which, by the way, it may be said: If vitalism, as commonly understood, then not emergent; if emergent, then no longer in accordance with the cardinal tenets of vitalism.

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Here we have a definite philosophical position professedly based on empirical grounds. Here we have explicit recognition of emergence as a generalized expression of facts of observation universal in their range throughout nature—facts to be loyally accepted "with natural piety." Here, after forty-five years, we have the starting-point of modern discussion.

A few supplementary words of personal reference may here be pardoned. Mr. Alexander says in a footnote to p. 14 (vol. ii): "I use the word 'emergent' after the example of Mr. Lloyd Morgan," and adds: "the word is used by G. H. Lewes, as Mr. Lloyd Morgan reminds me." He alludes in the text to what I had said in the concluding chapter of *Instinct and Experience* (1912). In that book I did not use the word "emergent." But in a paper in *Scientia* (1915), to which Mr. Alexander refers,[1] I had said: "This may perhaps seem to leave no room for the emergence of anything new in the world. If that were so, it is palpably at variance with evolutionary interpretation. But it is not so. . . . And if genuinely emergent (as contrasted with resultant in accordance with G. H. Lewes's distinction) it may be unpredictable. All prediction is founded on experience; and if the new emergent has never come within the range of experience, there is no basis for prediction. . . ." For one who accepts the new "it is, he believes, grounded in the constitution of nature, and when it comes he hails it with glad surprise."

In writing this paper I naturally re-read what I had said two or three years before in *Instinct and Experience*. In my interleaved copy there is this pencil note: "Why not work things out under heading Emergent Evolution? It would enable one to emphasize a policy of interpretation based on empirical facts of observation, leaving the question: To what may these facts be due? to be discussed as a wholly different issue, *e.g.* under some doctrine of Creative Evolution." Thereafter such notes as "question simplified under emergent evolution" and "emergent evolution the keynote"[2] are frequent. In my Address to Section J at the meeting of the British Association in 1921, "Emergent Evolution" is the first heading. I chose this title for my Gifford Lectures delivered in 1922.

Between 1915 and 1920, then, I played jackal to Mr. Alexander's lion in rehabilitating the word "emergent" and the concept it embodies. People who counted (and others) began to ask: What is this so-called emergence? What does it amount to? It seems to turn on the new and the unexpected, at any rate (in some sense) "before the event." It seems to involve some such notion as may be thus expressed: Given this, that, and t'other, what one gets is neither, this, that, nor t'other, or at all events not *only* these but a bit more—coming goodness knows whence. Does this mean that the "bit more"

[1] P. 46. [2] Opp. p. 162.

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is neither determined from without nor determinate from within? If so, can it be accepted by adherents to any consistent school of philosophy? Can it even be accepted by the man of science? What said Huxley, a contemporary of G. H. Lewes? Did he not say: "The admission of the occurrence of any event which was not the logical consequence of the immediately antecedent events, according to those definite ascertained or unascertained rules which we call the 'laws of nature,' would be an act of self-surrender on the part of science"? Pray tell us on what logical foundations this claim that emergents are not deducible can be established.

The last question is crucial. So we have in 1925 Dr. Broad's careful discussion of the validity of the concept of emergence. It is not for me to summarize his findings. One may at least say that the upshot is: On strictly logical grounds there is an arguable case for emergence. Nay more, as applicable to the main topic of his work—*The Mind and its Place in Nature*—it is very much to the fore. Of seventeen types of theory on the relation between Mind and Matter we find three in which emergence plays the leading part—emergent materialism, emergent mentalism, emergent neutralism; and sundry other 'isms in which it plays a subordinate part.

In the same year emergence figures prominently in Mr. Whitehead's *Science and the Modern World*. And last year, 1927, in Mr. Bertrand Russell's *Outline of Philosophy*, we find such headings as: Is matter emergent from events? Is mind emergent from events?

iii

That brings us up to date and completes my very inadequate, but I hope not wholly inaccurate, historical sketch. Opinions may differ as to the range of application, and within that range the manner of application, of the concept of emergence. All this remains to be further discussed. The question is whether the concept is valid at the bar of logic, and of service to the man of science; and, if so, whether Lewes did not start the hare we are now hunting when he said, more than fifty years ago: "It is precisely because effects are mostly emergents that Deduction is insecure."

It may, however, be said that the state of knowledge in Lewes's time was terribly meagre as contrasted with that of our own time. One often comes across such statements as this: Such may have been the science of the nineteenth century, but it is no longer the science of to-day. And if one ask what is meant by the science of to-day, one may be told that it is conspicuously illustrated by the modern theory of relativity and the current theory of the atom.

Now it is obvious enough that these theories as they now stand (or run) had not come within the ken of nineteenth-century exponents

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of the science of their day. Observation and experiment had not then reached the astonishing exactness and refinement of our day. Mathematical deductions of what is geometrically possible, from what one may broadly call the newly woven postulates of space-time geometry, had not yet been brought into close touch with what physics as a branch of natural science discloses as actual. Herein lies a difference between now and then. But is there a radical difference in the scientific attitude of, let us say, T. H. Huxley in the nineteenth century and some equally accredited representative of science writing now in the twentieth?

It is perhaps difficult to say. One has to select one's exponent. I suppose, however, that one may fairly regard the contributor of the chapter on "The Progress of Science" (1857–1887) to Ward's *The Reign of Queen Victoria* as, in the opinion of some of his leading contemporaries, representative of the scientific attitude forty years ago. But those who were then living are well aware that not by common consent was Huxley so regarded. He sought to combat that which he spoke of as "pseudo-scientific realism." And this, he thought, was widely accepted as science at that time. Indeed, almost the last words I heard from his lips were to this effect: "In accordance with my well-known theological proclivities I am Protestant against certain Catholic dogmas that are still promulgated from the pulpits of Science." What were these pseudo-scientific dogmas? I should reply in brief: that of Force as the efficient Cause of change; that of Natural Law as imposing itself, or being imposed, on the facts of observation over which it is supposed to "hold sway"; that of Necessity other than is implied in all logical deduction where, from the standpoint of empirical science, it does *not* mean something that makes the facts what they are.

In place of the second of these "dogmas" Huxley bade us rest content, in natural science, with comprehensive generalizations based on observation and experiment. He held that these generalizations, subject to progressive revision, suffice to justify a confident faith in a rational order of nature, that is, an order of nature susceptible of rational interpretation. On these terms he said, in effect, that Force as efficient Cause is not a concept with which natural science has any concern. With respect to Necessity he held that, on the basis of observation and experiment, we are not "in a position to set bounds to the possibilities of nature. . . . Of what will happen we have and can have no more than expectation, grounded on our more or less correct reading of past experience, and prompted by the faith, begotten of that experience, that the order of nature in the future will resemble its order in the past."[1]

What, it may here be asked, has all this to do with the topic of

[1] *Essays*, v, p. 198.

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emergence? It delimits, on methodological grounds, the universe of discourse within which the concept is, as I contend, applicable. Huxley urged that it is the proper business of empirical science to base generalizations on observation and experiment and to utilize them in the interpretation of nature. This, in brief, is what he includes, and all that he includes, under natural science. What he excludes is any discussion of the further question: To what Power, as efficient Cause, must we attribute the being of those facts with which we deal under observation and experiment?

But others said, and still say: What you arbitrarily exclude we include as essential to science as we characterize it. If you do not explain the course of events as due to some Power you leave it wholly unexplained. You simply ignore the efficient Causality to which it is due. Whether M. Bergson, to whom some of those who still say this profess allegiance, endorses their characterization of science is open to question. In one passage at least he very distinctly says: "La philosophie devra donc suivre la science, pour superposer à la vérité scientifique une connaissance d'un autre genre, qu'on pourra appeler métaphysique."[1] Here he seems to assign to the efficient Causality he is concerned to advocate its due place in a region *beyond* the purview of empirical science.

Since I cannot avoid personal reference, let me state clearly that, forty years ago, I sided with Huxley and not with these others in their characterization of science. I still side with him. And all that I have written on emergent evolution as such is subject to this delimitation of the subject-matter of empirical science. I still hold with Huxley, "that evolution is not an explanation of the cosmic process, but merely a generalized statement of the methods and results of that process."[2] In some such generalized statement the cardinal contention of emergent evolution must be incorporated without any "self-surrender" on the part of science. What I seek to emphasize is that emergence is for me a scientific proposition. And surely one may do this without prejudice to sundry other propositions so long as no conflict arises.

iv.

Now, as it was forty years ago, so is it to-day. Some delimit the domain of science in Huxley's way, some in a different way. But matters are not quite so simple as they were.

Take first Huxley's three counts. On the first count Mr. Russell says: "It is true that we must not conceive 'force' as an actual agency as the older mechanics did."[3] On the second count, with

[1] *L'Évolution Créatrice*, 6th edition, p. 217. [2] *Essays*, ix, p. 6.
[3] *Analysis of Matter*, p. 77, cf. p. 17.

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regard to gravitation for example—Huxley's example of a "law of nature" in his polemic against the then Duke of Argyll[1]—scarcely anywhere is it, as now reformulated, discussed in terms of efficient Causality. On the third count Mr. Russell says: "The appearance of deducing actual phenomena from mathematics is delusive. . . . There is no necessity for one fact to follow, given another or a number of others."[2] Was not this, by the way, Hume's protestant attitude with regard to "matters of fact"?

But, as I said, the present position of affairs is not quite so simple as it was. How so? Those who breathlessly follow (at a respectful distance) the rapid advance in the theory of relativity have, I think, to realize that, say, nine-tenths of it deals with "necessary" conclusions logically deduced from certain fundamental postulates of the new geometry of space-time. Whether "necessary" may be regarded as *au fond* "tautological"[3] we need not stay to consider. Of this nine-tenths (or whatever the proportion may be) Mr. Russell says: "The theory of relativity, to my mind, is most remarkable when considered as a logical deductive system."[4] It is the remaining one-tenth (let us say) that falls within the domain of experimental physics as a branch of empirical science based on observation. Here "what really happens is that the phenomena afford inductive verification of the general principles from which our mathematics start."[5] Hence Mr. Russell bids us distinguish "the geometry applicable to actual space which is an empirical study forming part of physics, and the geometry of pure mathematics, which gives no information as to actual space."[6]

I have called on Mr. Russell to give evidence as an accredited witness of modern developments. All may not agree with his findings. But I think few will deny that what we speak of comprehensively as "up-to-date physics" is in part empirical and in part what one may call postulative. Both parts are nowadays included under the heading of "science." In this sense science is compounded of two components which Mr. Russell bids us distinguish.

And the bearing of all this on the hypothesis of emergence? In the first place it would seem to have bearing on emergents in respect only of their spatio-temporal characters, and not in respect of certain other characters, such as the so-called secondary qualities, colour and the like, however closely the latter may be co-related with the former. Secondly, in regard to the former, the postulate may be said to "determine" in some sense what space-time configurations are possible. Obviously, therefore, all actual configurations, whether emergent or not, are included in those that are possible, and no such

[1] *Essays*, v, pp. 114–15.
[2] P. 88.
[3] Russell, *Analysis of Matter*, p. 171.
[4] P. 295, cf. p. 84.
[5] P. 88.
[6] P. 174.

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configurations as are impossible can exist. But, so far as I understand, the postulate does not "determine," in any sense, which of all the possible configurations are actual in our existing world. That is disclosed only under observation and experiment, in other words on empirical grounds. In the third place it is, I think, assumed that the postulate is an "all-levels" principle true for all time. No new "possible" can turn up some day that is not already provided for. Hence there are no indeterminate and unpredictable emergents. For under rigid determinism the order of nature *must be* not only what it was and is but what it will be. Let us admit that no one yet fully knows in respect to our existent world what inevitably must be. Still, what it must be that it must be, however impenetrably our ignorance may shroud from us what it will be. So-called emergents are therefore just the so-far-unknown "must be's" of the future, and as "must be's" are logically deducible on "deterministic principles."

v.

Now this argument presupposes acceptance of determinism as applicable to the existent order of nature, not only in respect of its spatio-temporal structure, but in respect also of all its qualitative richness, in colour for example. Is this in accordance with the empirical findings of natural science? Many will say: Yes. And I may here be reminded of Huxley's pertinent dictum: "The admission of the occurrence of any event which was not the logical consequence of immediately antecedent events . . . would be an act of self-surrender on the part of science." The question is whether in view of what he says elsewhere, and in view of later developments, the concept of emergence is ruled out of court as inapplicable to nature in its full richness.

First let me say that, in accordance with the theory of emergent evolution, what we find in our world is a multiplicity of natural events in natural relations. But we find—such is our claim—that orderly clusters of events may be arranged in a natural hierarchy. Mr. Whitehead has suggested that any natural cluster of events organized on a definite plan shall be called an organism. On these terms there is a natural hierarchy of organisms, on an ascending scale of stages or levels.

Revert now to Huxley's statement. It is an expansion of the "axiom" which runs: "There is not, never has been, and never will be, any disorder in nature." To this "axiom"—which I take it means this generalization based on observation and experiment, coupled with what he spoke of as "strong expectation"—all men of science who accept his teaching will unreservedly subscribe. But further—

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leaving surely some scope for emergence—we have such a passage as this: "We are *not* [his italics] justified in the *a priori* assertion that the order of nature cannot change."[1]

Now if there be a hierarchical order, and if this order be evolutionary, we seem to be justified in the *empirical* assertion that the order of nature *has* changed in the course of hierarchical advance. Does this imply any disorder in nature? When once and for all we give up the notion, which some are so loth to surrender, of a *static* order of nature, fixed and irrevocable, does it follow that a changing order must be disorderly? We claim that, far from disclosing anything disorderly, emergent evolution discloses an orderly advance in a changing order of nature. In other words, we claim that some new empirical generalization is required to cover the orderly advance in the evolutionary course of natural events. If this be so, in what respect does such a generalization differ from other accredited generalizations in the domain of natural science as followers of Huxley delimit this domain? On what grounds can it be said that its acceptance entails "self-surrender on the part of science?"

But pressed home and universalized, the hypothesis of emergence does imply that at any given evolutionary moment the order of nature is then incomplete—that even now we live in "a world in the making" as contrasted with what William James called "a block universe." If this be in accordance with the findings of natural science, why should it not be loyally accepted and expressed in terms of empirical generalizations? I suppose they would incorporate some such propositions as these: (1) There has been a hierarchical order of new modes of organization, with attendant properties, in the evolutionary past up to date; (2) there are no grounds for supposing that there will be in the future no further steps upward in evolutionary order; (3) there are good grounds for expecting that new steps, if such there be, will prolong the orderly, and nowise disorderly, advance of nature; but (4) there is no logical basis for deducing what will be the nature, in characterizing detail, of new modes of organization not yet existent in our world.

The emphasis here falls on the claim that not only is our knowledge of nature in process of evolution, but nature itself has been, and still is, in course of evolution, coupled with the acceptance at the hands of competent logicians of the conclusion that the existing order does not afford a basis for deducing what the next step in hierarchical advance will be. We must be content to await its arrival, if it come, in the confident expectation that it will prolong an advance which thus far justifies us in speaking of an order of nature.

[1] *Essays*, v, pp. 70 and 204.

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vi.

Now I am not prepared to deny that there are many men of science who are staunch determinists, and I think not a few of them would contend that all scientific treatment of causation presupposes acceptance of a deterministic creed. But this, I submit, is one of the "catholic dogmas" against which Huxley raised his voice in protest—subject, of course, to his delimitation of the domain of natural science. For strictly empirical science—and that is what he meant (and I mean) by "natural science"—the imposing and impressive "demon" of Necessity no longer hovers over the scene of causation; no longer dictates any "must be" to the plain matter-of-fact happenings disclosed under observation and experiment.

Some, however, may say: Oh yes; forty years ago; but now? Well, as I read the "now," in modern physics for example on its empirical side, Huxley's attitude is pretty widely endorsed. The word "cause" no doubt is still used. But, for many, it no longer implies something which makes the observable facts what they are (efficient Causality), but only states clearly the given conditions under which they are just as they are (relational causation). In support of such a view as this, otherwise expressed, I refer the reader to Mr. Bertrand Russell's *Outline of Philosophy*.[1]

I venture to say that among physicists Huxley's contention—that any introduction of the concept of Agency or efficient Causality is empirically *ultra vires*—is widely endorsed. I do not say that it is endorsed by all physicists as such. I am well aware that Mr. W. E. Johnson speaks of those men of science "who reject causality altogether and substitute invariability." He then discusses matters on the basis of "the recognition of two kinds of *agency*—psychical agency and physical agency"—"whenever (as seems inevitable) the notion of causality is superposed on that of invariability." May one correlate Mr. Johnson's "superposed" in this passage with M. Bergson's "superposer" in the passage I quoted above? *There* what is superposed on "scientific truth" is "knowledge of another kind which may be called metaphysical."

Do we not again come back to the two ways in which science may be characterized on methodological grounds, that in which agency is included, and that in which any concept of agency is excluded? Since both ways are, so to speak, open ways, should not each of us state clearly along which of these two he proceeds on his course? I have tried to do so without dogmatically asserting that it is the only way.

And the bearing on emergence? Once more I must repeat that, on my way of characterizing natural science, the acceptance of emergents is a purely empirical proposition. On this footing, and this

[1] Chap. xi and elsewhere.

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footing only, as I contend, does it invite critical and impartial consideration. That, however, does not preclude, nay rather it raises, *further* questions, lying beyond the purview of natural science: How can this empirical proposition be squared with sundry widely accepted propositions concerning some operative Power as efficient Cause? How can it be squared with some all-embracing Principle, say some postulate of space-time geometry? Such questions, I contend, raise issues other than the purely empirical issue. They should be heard in a different court of appeal. In that court the deterministic issue should be tried. So I say no more about it here; merely adding that I gather from the context that many men of science when they use the word "determined" mean only "in accordance with the order of nature," without implying any reference to some Power or Principle that causally determines.

It is, however, difficult for the proverbial plain man to grasp what the word "cause" can still mean if it be shorn of all reference to some Power that "really causes"—whether that Power be mechanical Force, or Vital Impulsion, or the urge of Mind Energy, or God. Let me, then, state briefly my own point of view.

The man of science (as I characterize empirical science) deals with the behaviour of events, or of those orderly clusters of events which Mr. Whitehead calls organisms. But the behaviour of events is what it is in accordance with the relatedness that then and there obtains. The natural relations may be, let us say, temporal, spatial, physical, or mental. In what hierarchical mode of combination these relations are present when this or that instance of behaviour is observed in this or that organism, is just what the man of science seeks to ascertain in fullest possible detail. That is his job. Should he not stick to his job? Suppose that he is fairly successful. Then he can say: Given such and such kinds and modes of relatedness, such is the observable behaviour. This is a generalization based on what we speak of as the facts in the field of inquiry.

Now we have grown accustomed to talk in terms of cause and effect. We regard the observed behaviour as the effect. Then, from the point of view above indicated, the cause is no other than, and no more than, the total relatedness that then and there obtains. This may be called relational causation. It need not imply denial of efficient Causality, which raises a different question, namely: To the operation of what Power may be attributed the facts which are described and subsumed under the generalizations of relational causation?

But if we regard this further question as beyond the purview of empirical science, and if we take as our canon of interpretation: Given such and such a field of relatedness, such is the observable behaviour; then *all* the kinds and modes of relatedness so given in

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combination should be reckoned in the nexus of causation; then there remains no valid reason why the relations we call mental should be arbitrarily excluded—those for example which we discuss under perception, nay more, all those which fall under the heading of conscious reference. For if certain forms of behaviour be observed when, as we are led to infer, these relations are present, and is not in evidence when they are seemingly absent, we must surely count them for all they are worth in the total causal relatedness as given? Common sense has always done so. Why should empirical science hesitate to do so? Only, I think, because some men of science still cling to the notion of the efficient Causality *of physical Force*—in other words still cling to the tenets of a discarded materialism as part of their philosophical creed. Huxley, who repudiated such a philosophy—Huxley (to quote him again) made full provision for relational causation, when he said: "The only meaning of the law of causation, in the physical world, is, that it generalizes universal experience of the order of that world; and if experience shows a similar order to obtain among states of consciousness, the law of causation will properly express that order."[1]

vii.

I spoke above of a natural hierarchy of organisms, in Mr. Whitehead's extended sense of this word, on an ascending scale of stages or levels. It matters not for our present purpose what that hierarchy may be. Bits of it here and there have already, we think, been disclosed by scientific inquiry—by physics near the foot of the scale, by biology in its mid-region, by psychology near its summit. There are no doubt gaps in our present knowledge of the ascending scale of organisms. It is the business of further inquiry to fill in these gaps until we have a complete series of next-to-next stages of evolutionary advance. We are far enough from this goal. But may we not at least regard serious endeavour to reach it as sound policy in scientific interpretation?

Mr. Whitehead, then, invites us to give downward extension to the concept of organism. I accept his invitation, though it empties the word of all that used to be implied by it when it was restricted to the living. On these terms there is a hierarchy of organisms, say, from atom to man, on a curve in which very many "points" have still to be interpolated. But the plan of organization of the atom is very different from the plan of organization in the man. None the less, there is something common to both—something disclosed also in the organization of men in social fellowship. If there be an order of nature up to date it is to be expected that common to all hierarchical sub-plans there shall in due course be found a comprehensive plan of

[1] *Essays*, vi, p. 214.

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organization susceptible of statement in some no less comprehensive generalization.

In search of something of this sort I have elsewhere asked leave, if only for purposes of exposition, to give to the word "fellowship" the same kind of downward extension which Mr. Whitehead has given to the word "organism." It is intended to mean a "specific mode of relatedness" and what this implies. What it implies is, I think, brought out by the use of the word "fellowship"; for this does imply members that play their parts in fellowship.

I picture, then, even the atom as a community of which the members are protons and electrons playing their parts in atomic fellowship; and, at the next hierarchical stage, I picture the molecule as a community of atoms, which, as members, play their parts in molecular fellowship. All up the hierarchy I picture the organisms of the lower of any two levels as constituting members in a new mode of fellowship above it. I try to translate my thought into concrete terms. But in symbolic terms the notion is: *a*'s go together to constitute some *b*; *b*'s to constitute some *c*; and so on up the scale, as far as it has reached in evolutionary progress. But the emergent claim is this: Take your stand on some organism at some level, say *c*; from that level you can neither predict what will be the nature of the next mode of fellowship at stage *f*, nor what will be the part that any instance of *e* will play as member therein.

Remember that this purports to be an evolutionary schema. *Ex hypothesi* at stage *e*, neither the mode of fellowship *f*, nor any members in that mode of fellowship, were yet in existence. If, then, some supposititious person who lived at stage *e*, and knew all about the behaviour of events at this and lower stages, were asked to predict what further mode of fellowship there was likely to be, he would not have the data which would enable him to do so. He must await its coming. Then on the basis of observation and experiment he could formulate *f*-generalizations. But they would embody something new and unforeseen. That something new we speak of as emergent.

Something new in the higher fellowship; something new in each member newly incorporated in fellowship. What new in each member? The new characterizing feature that emerges when it then first plays some part as member in this mode of fellowship. It is no longer what it was prior to fellowship.

Herein for many logicians lies that which forbids their acceptance of emergence in any such form as this. Let me illustrate from near the bottom of the scale. The neutral atom of helium, as I understand, has two electrons which play their parts in close association with a group of four protons in the nucleus, and two which play their orbital parts pretty wide of the nucleus. Now we are told that out of fellowship all protons and all electrons are exactly alike. So be it, *out of*

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fellowship. But we say that *in fellowship*, that is, *as members*, all four electrons are in some measure emergently different in accordance with the parts that they severally play.

This is roundly denied by many logicians. But others regard it, and the like at all stages of fellowship, as an implication of an organic theory of nature. Thus Mr. Whitehead says: "An electron in a living body is different from an electron outside it, by reason of the plan of the body. . . . But," he adds, "this principle of modification is perfectly general throughout nature, and represents no property peculiar to living bodies."[1]

I might here raise the question: If we may regard the suite of atoms as a hierarchical series, and if we label the hydrogen atom, with one proton and one orbital electron, *a*, and label the helium atom *b*, is the exact mode of fellowship in *b* predictable from generalizations based on the facts of behaviour at level *a*? Whatever the answer may be, the question is, I think, pertinent in respect to emergence.

viii.

I have tried to state the case for emergent evolution as I see it. I have not discussed the ways in which my colleague Mr. Alexander (or another) applies the concept of emergence. That would have taken me much too far afield. While Mr. Alexander and I may agree that so-called secondary qualities are emergent (whereas Mr. Whitehead says that they are not emergent but ingressive), as to the manner in which, and the relational conditions under which, they emerge, we may hold different opinions. While we may, as I think, substantially agree in claiming that tertiary qualities (values) are in some way emergent, I may regret that in the series of valuable papers he has recently published on Art Mr. Alexander has not laid more emphasis on the leading rôle which is played by emergence in mental attitude; for the higher we ascend in the hierarchical scale the more numerous and delicate are the nuances of emergence. We may agree that human mentality demands emergent interpretation; but I may harbour grave doubts whether the kind of relatedness we call mental is emergent from the kind of relatedness we call physiological, if that correctly represents his teaching. And so on.

What I want to get down to is what the concept of emergence stands for. And that is? A generalization *founded on observation and experiment*. Of such is the kingdom of science. The man of science says: Give me facts on which to base generalizations. My belief is that among these facts is the frequent appearance through emergence of something new and unforeseen when first it comes. I hail these emergents, as I said a dozen years ago, with glad surprise. But,

[1] *Science and the Modern World*, p. 111.

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it may be asked: To the efficient Causality of what Power are they due? More generally: Given your emergent evolution, how do you propose to explain it? In my capacity as man of science it is no part of my business to explain it. It is my sole business to give as clear a statement as I can of what it actually is. You are content, then (it will be said), to leave it wholly unexplained. I confess that I have not been content to do so. I venture to apply to myself—myself much too prominent, I fear, in that which I have here written—the words of my master in science. "I have never," said Huxley, to quote him once more, "given the slightest ground for the attribution to me of the ridiculous contention that there is nothing true outside the bounds of physical science."[1] Here I should substitute "natural science" to include all modes of relatedness, mental no less than physical—to comprise all that is disclosed by observation and experiment in a liberal sense of these words.

[1] *Essays*, ix, p. 126.

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RELIGION AND SCIENCE

A GENERAL SURVEY

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In considering this perennial question of the relationship between science and religion it is important to avoid any appearance—or reality—of burking the facts. When one speaks of science one speaks of science as it is understood, and as research is carried out in it, by specialists in the various fields; and it is the most honest and the wisest course to consider in each separate science what exactly the results amount to and what the theories represent.

Physics.

Turning first to physics—the most fundamental of the sciences in the view of many scientists—we are faced with the problem of deciding on the philosophical significance of Einstein's theory of relativity.

This theory has been somewhat misrepresented both in philosophical circles and by the general public, and has been rather unthinkingly regarded as a widening of the bounds of possibility. That is not what the theory of relativity does in physical science. As far as one can make out, the advance that has been made by Einstein in the theory of relativity has been to do in a more thorough way what all physics attempts to do, namely to abstract from the point of view of a particular observer. Physical science deals with material change and describes it independently of the effect of its appearance to any particular observer. It omits the points of view of different observers, and what Einstein does in the special theory of relativity is to allow also for the relative movement of the observer and the thing observed when such movement is uniform. And in the general theory of relativity Einstein allows for irregular movement—acceleration or retardation of the observer with reference to what is observed—and he finds that, allowing for this and admitting the constancy of the velocity of light in a vacuum—away from matter—whatever the velocity of its source, and that it is a limiting value which no other velocity can exceed, the laws of so-called field-physics, of gravity, electromagnetic forces, etc., can be expressed as identical with the laws of geometry, if one generalizes geometry and considers non-Euclidian geometry with reference to

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Gaussian co-ordinates. He has in this way shown that the law of gravitation is simply a special case of the geometry of space. For him, space and matter are not completely distinct from one another. Also by this theory he has been able to identify the principle of the conservation of energy with the principle of the conservation of mass, and to show that they are both aspects of the same thing; indeed, that the facts of field-physics—the physics of fields of force, of atoms and molecules moving within a gravitational field—can be explained on the basis of a far smaller number of postulates and deductions from them (although with a system of much more complicated mathematics) as compared with the laws of ordinary mechanics. But apart from the complication and abstruseness of the mathematical reasoning—the logical deductions from these postulates—the postulates themselves are simpler, and yet the conclusions are more general but more accurate. The effect of gravity upon light is measured more accurately according to Einstein's theory than according to that of Newton, and Einstein has explained other deviations from Newton's theory.

Field-physics form a closed system, and the physical universe for modern thought has still greater *objectivity* than before. But this is because the world of physics is an abstraction. The laws of physics are laws of measurement, and physics deals with only one aspect of existence, namely the metrical or quantitative aspect. That aspect is found to be very definite and obeys very definite and accurate laws. But being an abstraction it lies outside the consciousness of the observer; so that psychology, the science of the mind, is regarded rightly as apart from physics, the science of matter. According to the system of physics—according to the way in which it has been worked out—there is no path between the one and the other.[1]

If we now turn to the other part of physics that is specially prominent at the present day—viz. intra-atomic physics, the science of the activity of electrons and protons within the atom—we find the problem of the quantum theory, according to which energy is radiated in minute packets, as it were, or in fixed amounts varying with the vibration frequency of radiation. At the present time there is very great difficulty in this question. According to some theorists there is a degree of indetermination or of chance involved in the radiation of energy from the atom. The movement and the radiation of the electron according to the theory of Niels Bohr appears to be discontinuous. An electron suddenly disappears from one orbit within the atom and reappears in another, and as a result energy is

[1] I deal more fully with the Theory of Relativity in my forthcoming book, *Religion and Personality*, to be published by the Oxford University Press, which is based upon my Terry Lectures on Religion and Science delivered at Yale University in March 1928.

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radiated out. This theory would involve the view that within the atom there is discontinuity of space and time. Moreover, the moment at which the electron is supposed to make its "jump" is (according to Jordan and others) not completely determinate, so that in the heart of matter there seems to be a degree of indetermination or spontaneity. But we should not be too ready to generalize in this matter, but should patiently follow the physicists and wait for them. At the present day physicists like Heisenberg (matrix theory), Schrödinger (wave mechanics), Jordan and Born, etc., are working it out and are struggling to get back to continuity. The fact is worth mentioning merely to show that we cannot take either complete determinism or relative indeterminism for granted even within the physical domain. In field-physics we get what seems to be determinism, because all these measures fit into one another and take up the metrical and gravitational laws into themselves, but that is because they are really laws of *identity*. They are laws similar to the laws of ordinary geometry—of Euclidian geometry—the properties of the circle, conic, etc., but they are laws of a more generalized form of geometry—non-Euclidian geometry—using Gaussian co ordinates instead of Cartesian co-ordinates. Physics deals only with the quantitative aspect, not with the qualitative aspect of material change.

Biology.

We turn from the science of inanimate matter to that of animate matter—to biology—and we find there a fundamental concept attracting great attention at the present time, namely the concept of *emergence*. Like the word Mesopotamia, it may have a comforting sound, but it covers a multitude of difficulties. Professor Lloyd Morgan and others speak of "emergent evolution." The adjective "emergent" emphasizes the fact that in the course of evolution there is an emerging of new properties, of new characteristics, not adequately explicable in terms of previous change. In the course of biological evolution something new is created—there is continuous creation. That creation may be regarded as either (1) occurring according to a determinate plan or definite rule, so that it does not involve freedom, or (2) as a process of free creation. It is not easy to decide between these two alternatives. It depends on the temperament of the scientist whether he will adopt the view that emergence is deterministic—such that properties and characteristics proceed to change *according to rule*, without any shadow of variation, or that the emergence of new properties occur with some amount of spontaneity and a degree of freedom in the forces working in the background. Strictly, if we keep to the physical aspect of biology we find that it is descriptive and does not deal with any conception of

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underlying causes. But anyhow, if we try to be in earnest with this doctrine of emergence we may believe that the appearance, say, of higher and higher degrees of conscious activity and more complex forms of self-regulation supervening upon or correlated with increasing degrees of complexity in biological processes or physiological processes are instances of such emergence. It is, however, doubtful if we should be right in holding the doctrine of emergence of the mental from the non-mental.

Here we must remember that change—the apparent sequence of development—is not self-explanatory. We have to bring in the conception of something else, namely a background with does not change, and if we do that, then this principle of emergence is not so unintelligible. What emerges is not merely a consequence of previous change, but it represents or manifests a characteristic of the timeless or eternal background, of the Absolute or of God. So that even within the realm of biology we are faced with a contrast between the temporal and the eternal, and we find that for an adequate rational appreciation of the situation we must assume the Eternal.

There are two concepts of evolution, viz. (1) evolution *within* the universe—of organisms that are struggling with one another, with survival of the fittest, etc., and (2) evolution *of* the universe. These two concepts of evolution are really quite distinct. The second or metaphysical concept of evolution is quite distinct from the concept of individual organisms developing in relation to a definite environment. The universe itself has no environment. It has everything within itself. It is not in time. Time and space are within it. If now we look back even to the physical and chemical world from this point of view we find, even there, emergence. When oxygen and hydrogen combine to form water, the properties of the new substance are distinct, and are not such as we can infer from the properties of oxygen and hydrogen as independently observed.

Considerations such as these show that science when followed up in its own domain and according to its own rules leads on to something other than science—leads on to philosophy or metaphysics.

In the biological world we find a tendency towards the development of systems, unities, totalities of greater and greater complexity and closer and closer unity of organization; and again, if we look back to the world of chemistry and physics, we see the same principle at work. Molecules, atoms, and electrons are not entirely distinct from one another, just by chance interacting with one another, but are parts of a unity. Their behaviour is modified in relation to a material system of which they form part. Even in the physical world the whole is greater than the sum of its parts (A. N. Whitehead).

The most fundamental of the sciences is not physics or chemistry. The latter are abstractions from the point of view of measurement.

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They abstract from the factor of organic activity. Biology as the science which deals with this factor is the most fundamental physical science. The laws of chemistry and physics may be regarded as quantitative aspects of biological activity. This view is not crude vitalism or neo-vitalism, but it is a view that saves us from the doctrine of blind mechanism, which would seem to follow from the other way of putting things—of putting physics at the basis of reality and explaining degrees of reality in terms of degrees of mechanical complexity—explaining the animate in terms of the inanimate.

Psychology.

When we turn to psychology we have the question of soul and mind as dependent on or relatively distinct from the brain. We have to ask ourselves whether the mind is distinct from the brain. Again we have to remind ourselves that physical science has from the beginning abstracted from consciousness and has left us no means of linking up the mind with material change. What we observe is activity of the mind in relation to physical change in complex parts of the body, but we have no direct knowledge of the nature of this relation.

There is nothing to prevent us from holding the view that although self-conscious mind may have developed out of simpler forms of biological process, it gradually achieves a greater and greater degree of independence, and is able to react upon the body with an increased degree of freedom and indetermination of psychical activity, and eventually may survive physical death. We cannot say for certain that the opposite is proved by modern science, viz. that the mind cannot survive bodily death.

It is more definitely within the realm of psychology that we come into relation with the question of religion. We come to it through the intermediary of the doctrine of values.

Theory of Value.

Psychology as a science considers the mind from the temporal point of view, and endeavours to establish laws of mental activity as a sequence of mental processes in time. But the mind also shows a non-temporal aspect which is the aspect of *value*. It has the power of forming the ideal of knowledge and considering the extent to which actual experience falls short of knowledge. It can form an ideal of beauty, and can consider and state reasons why any particular product or activity falls short of such a standard in fact. It can form an ideal of duty, of goodness, of perfection, and can state conditions under which the mind falls short of that standard of

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value. These are the well-known eternal values of goodness, truth, and beauty. They are non-temporal, they are out of time, and yet they occur within the individual mind, they are appreciated by the individual mind in process of time. In writings on the subject we find as a rule these two aspects set one against the other—eternal values on one side and individual mental processes on the other. It is as if we come to a blank wall and can but say: "How good," "How beautiful," "How true." But we need to go further. We need to show the *conditions* under which beauty is appreciated and the conditions under which it is created. It is the same with goodness and with truth. And here we have to come back from philosophy to psychology. Philosophy by itself is barren. It is through psychology, through observation of actual life and conduct, that one may obtain ever deeper knowledge of these values.

Religion.

Various definitions of religion have been given. We may say that religion is the attitude which the mind takes up towards the totality of existence. Or again, that it is the feeling we have of complete dependence upon the universe. That is Schleiermacher's definition. But neither of these definitions by themselves, nor both together, really cover the ground. An irreligious man may take up an attitude towards the entire universe—an attitude of contempt or ironical depreciation or mere neutrality and indifference. The feeling of dependence, too, is not by itself adequate. If we consider the state of mind of people who call themselves religious and quite obviously are religious, we always find an element of *worship* present—worth-ship, appreciation of value, the feeling that there is a supreme value to which the human mind can have some sort of relation and to which it naturally responds, a reality which excites adoration because it is good. And how are we to relate this object of our worship to the reality of values of which I have been speaking? The relation seems to me to be a relation of the concrete to the abstract. The general values of truth, goodness, and beauty are all abstract—all aspects of real existence. And they all go together. One is not superior to another. They are all on a level with one another. It is, *e.g.*, absurd to speak of a work of art as being æsthetic, but non-moral or immoral. The different classes of values are independent of one another because they are different sides of the same Entity, viz. God. A view like this is not Pantheism. It is indeed a view of God as including everything, but in degrees. Values are recognized as possessing degrees for the finite individual, but there is an order of precedence or hierarchy of values which may probably claim objectivity and universality. It is through experience itself that one gains a deeper

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and deeper appreciation of values, while attaining greater power to realize them. Degrees of value are degrees of reality. Good is the real thing, and evil is a falling away—something less complete and real than good. Truth is the real thing, and error is a falling away from truth. Beauty is the real thing, and ugliness is a falling away from beauty. In psychology we consider the conditions and factors which play a part in causing that falling away. If we turn to the biological side we see a similar contrast between health and disease. Health is the metaphysically real thing, and disease is a falling away from health for various reasons. In physical medicine disease is explained by lesions of tissues, injury of tissues, through bacterial infection, etc. But a great deal of illness, physical as well as mental, is merely functional. It is a disturbance of internal adjustment or of the adjustment of the individual to his environment. In medicine, therefore, we find that so far as there is any definite structural or "organic" disturbance it has to be dealt with by physical means. In functional disease, or in the functional aspect of disease, it is the change of mind in the patient that is important, and this is a change from the simple to the complex, or from unity to multiplicity. Health is a simple thing: it is disease that is complex. Truth is simple; error is complex. There is one way of hitting the mark, but innumerable ways of missing it.

Psychotherapy.

This brings us to the problem of psychotherapy, or of psychology as it is used to correct inadequate or faulty mental functioning. There are two general forms of psychotherapy: one is suggestion and auto-suggestion, and the other is analysis. First as regards suggestion and auto-suggestion. Its importance is seen in this, that in the form of bad auto-suggestion it is the cause of a great deal of illness, a great deal of falling away from health. If we investigate the situation further we find that it is a matter of *fear*, which in its turn is a matter of lack of faith. We find that suggestion treatment benefits the patient because it neutralizes bad suggestions that have come unwittingly into the mind and have worked unconsciously, and it thus puts the patient on the right road towards health.

We see further, when we analyse these patients and get to the background of their minds, that ultimately suggestion is always a matter of faith. Just as bad suggestion is a matter of lack of faith—fear, anxiety over small things—so beneficial suggestion is really and fundamentally faith. Suggestion is often described in the text-books as if it were a passive thing—as if the implanted idea tended to realize itself according to the law of ideo-motor action, by its own momentum as it were, but actually there is much more than that

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going on in the mind. The mind takes up an attitude, which is an active thing. It develops the will to believe that it can get well, and there is a reason for that will—viz. a belief in the "worth-whileness" of things, an appreciation of values. We come back to the doctrine of value. Patients need to be helped to realize once more that life is worth while, or that certain aspects of life are worth while and worth taking trouble about. If they can get that view of life they are on the road towards faith and health. In this respect it can be said that modern psychotherapy is in harmony with the teaching of our Lord in the Gospels as regards the regaining of health.

What can we say about analysis? That is a deep-going disentangling of the mind, a readjusting of fundamental impulses and tendencies. Analysis is a bad word, because it implies the breaking up of the mind into its constituent parts, a result which does not and cannot happen. On the contrary, as a person is analysed his mind becomes more and more unified. Analysis removes bad and disturbing effects of chance experiences of the past with their emotional reactions which have become fixed in the unconscious. The person becomes more himself. His true self is released. The method of analysis is a method of release through self-knowledge (autognosis). The patient is released from bad effects of his past physical and social environment. He is able to be more himself, and in the course of the analysis he is able to appreciate more fully what values mean, and how values change and develop from stage to stage in the course of life. So that analysis is a definitely educative and ethical process, and has a direct bearing upon religion. Certain analysts have attempted to explain—and explain away—religious feeling in terms of infantile experiences of relations towards father and mother (Œdipus complex), or in terms of a regression, a stepping back to a more infantile attitude towards life. In support of this view they wrongly emphasize the "sense of sin" as an essential element in religion. But although the early relation to parents, etc., is most important for later life, and the process of regression or stepping back to an earlier stage of development can occur with detrimental effect, yet the religious attitude as such does not show itself in course of analysis as merely due to that. It may be that the religious view, just as the ethical view, or æsthetic view, or logical view, has been disturbed and distorted by past experience. Just as a person may have slight delusions about a fact which can be cleared up under analysis, so the religious attitude may be *purified* by analysis, but it is not removed. It is only those who think of analysis as a merely reductive thing—reducing things to their elements—who could hold the other view. The mind is Janus-like: it looks forward as well as backward. It has reference to what has gone before, but it also looks ahead. Here we see the important contrast between time as it is measured in

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physical science and found to be in relation to space (space-time) and time as it is experienced by the living mind. In the one case time is spacialized; time is a sequence—one thing after another. In the other case it is an interpenetration. Within the "specious present" there is also past and future.[1] This interpenetration brings with it a degree of freedom, a possibility of self-determination. As we can look before and after, we can, on the basis of that, transcend time. Thus, so far as we are conscious at all we have some degree of freedom. But that freedom is very slight. We find greater freedom coming with organization of the mind and reflection about the mind. Self-knowledge brings with it self-control, and in that way a greater freedom, and also brings with it a power to transcend the temporal. Here again, in contrasting science with religion, we find psychology in an intermediate position between the physical sciences on the one side and the philosophical sciences and religion on the other. In psychology one finds this transition from and through the temporal to the eternal. Every individual has had experience of that transition. In the appreciation of works of art there is such a transcending of time. Even in the appreciation of music (an art in which temporal relationships seem of its essence) the listener must transcend the mere sequence of the notes.

In religious experience this transcendence of time may become still more pronounced. A very important element in the religious experience of some people is what is called mystical experience. The term mysticism has often been used in very vague and varying senses, but it has a definite and intelligible sense as denoting an immediate experience of union with the spiritual universe or communion with God, involving the transcendence of individuality. Indeed our individuality as such is an abstraction. Each one of us is more than his own individuality. Personality as distinct from individuality carries with it an element of universality. The individual is part of his family, his group, his nation, and of humanity in general, and can rise above merely individual feeling in these respects. But he can also achieve a feeling of identity with the entire spiritual universe, or of communion with God, in which, although individuality is transcended, the full scope of personality is attained. He can develop that experience and cultivate it. In doing so he must of course be careful to avoid just the opposite result—the intensification of narcissism—the worship of his own individuality. As one reads the literature of mysticism one finds very often that the experience described as mystical has been just the opposite of true

[1] As William James has said: "The practically cognized present is no knife-edge, but a saddle-back, with a certain breath of its own on which we sit perched, and from which we look in two directions into time." *Principles of Psychology*, vol. i, p. 609.

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mysticism—has been an over-intense feeling of individuality in which the individual's emotional energy has become fixed upon himself. It has been more and more completely withdrawn from the world; but instead of being projected upon or linked up with the divine, the emotional energy thus withdrawn from the world has been turned in on the person himself. He may have a feeling of emancipation from the conditions of space and time, but this is really due to an excessive narcissism, a degenerate movement in the opposite direction to that of religion. Subsequently he may get very grave reactions to such experiences. Patients have reported more or less prolonged periods of deep depression following upon such experiences of apparent mystical communion—presumptive evidence that the latter was also morbid in nature. Such experience is not true mysticism. Mysticism is not just a pleasant subjective feeling, but an awareness of an object and a feeling of union with that object. It is not a merely subjective thing, it is the extreme of objectivity. Indeed, the whole burden of this paper on Religion and Science is to exphasize the importance of objectivity throughout. It is a remarkable fact that while the greatest genius in physics, Einstein, has increased the objectivity of the physical world for us, one of the greatest theologians, Baron Von Hügel, always emphasized the importance of objectivity—of getting beyond the merely subjective—in matters of religion. The immediacy of true mystical experience comes as the fruit of much mediated experience and vigorous mental and spiritual activity. Self-discipline, both intellectual and practical, and a continued striving after sincerity and purity of motive, prepare the soul for its illumination.

Another characteristic form of religious experience is the process of conversion. This is a change of mental attitude, whereby the soul turns from a merely naturalistic outlook on life to a spiritual outlook —from the standpoint of the temporal to that of the eternal. Such experience may come suddenly, as a sudden conversion,[1] or it may arise as a gradual development through a period of years. In the latter sense possibly we should say that conversion is a normal and an essential element in all religious life.

Finally, it should be pointed out that in any consideration of the relation between religion and science it is important to see the matter in true perspective. We must not think about it in terms of one science alone. The physicist, for example, if he thinks of his science as the only real science and of others as less fundamental,

[1] Sudden conversion is probably the result of a subconscious process of incubation, and is therefore not so sudden or inexplicable as it appears to be. It may sometimes be accompanied by hysterical or other morbid manifestations, yet we cannot infer from this that the process of sudden conversion is itself a morbid one.

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less necessary, less significant for the truth of existence, is going to prejudice his religious life. The person who thinks merely in biological or psychological terms, or merely in ethical or philosophical terms, will be doing the same thing. These various sciences all have their places, and ultimately religion corresponds to an adequate sense of truth values. Religion must include these truth values in their right proportions, together with the values of æsthetics and of ethics.

If we can distinguish one general trend of thought at the present day, I think we should say that it is in terms of organism, of plurality in unity, in which the whole is greater than the sum of its parts. Throughout the world-process there is a striving towards a greater and greater degree of systematization—a building up of wholes of an ever greater extent and ever greater degrees of systematization. But this process leads on to the development of self-conscious personalities, as distinct from mere individualities, in personal relationship with one another and with a personal or super-personal God. In religion we find that this experience of development of personality gives us a deepened insight. We cannot deduce what truth is. We can only find out by experience, and if we turn to the Gospel story we are more and more impressed with the essential truth, from the scientific point of view, of the doctrines of Jesus, and in particular we feel that certain sayings of His, such as "He that loses his life for My sake and for the gospel's sake shall save it," though not easily thought out in terms of ordinary concepts, do carry with them a truth which is quite in harmony with all that we know of the world and of human nature.

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THE POSSIBILITY OF RATIONALISM IN ETHICS

PROFESSOR JOHN LAIRD

AN ethic is rational if it can justify itself rationally—that is to say, if there is a "why" and a "wherefore" in it amenable to reflection, and underivative. An ethic, on the other hand, is irrational if reason and reflection are irrelevant to it, or if, being relevant, they are fundamentally subordinate, and are only the lackeys of a governing consideration which is either irrational or non-rational. The intention of this lecture [1] is to explore the possibilities of rationalism in ethics, supposing that the meaning of rationalism is, broadly speaking, what has just been stated.

Whatever we may think of the ancient but unfashionable opinion that man is a rational animal, we can hardly avoid allowing it a certain measure of truth. All men have a certain grasp of the why and the wherefore of *something*, or in other words have a definite, if small, capacity for understanding general principles and for applying these principles relevantly to *some* particular cases. Such capacity effectively distinguishes the human species from its furry or feathered cousins; and this faculty which all human beings, other than imbeciles, possess in some degree is found in a very high degree in certain men regarding many (though never, very likely, regarding all) of the possible directions human interest may take. Hence all the sciences and many of the arts.

Human beings, therefore, are sometimes reasonable in some respects, and "reason" seems to be neither more nor less than the capacity for reflecting upon *and employing* some general principle. So far, I hope, we are all agreed; and I have no desire to labour what is notorious. It is here, however, that any simulacrum of general agreement commonly ends; for we are told very often, and (as I suppose) never more confidently than to-day, that our capacity for understanding and employing principle is *restricted* to the "natural" sciences and to the useful arts, and consequently that there is *no such thing* as reason or reflection having a sovereign or even a directing potency in the governance of our lives.

According to this modern way of thinking (which, it must be confessed, is also rather elderly), our sciences and our arts, together with the principles that go along with them, enable us to trace the

[1] Given to the Institute February 14, 1928.

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connections between means and ends, and in general can supply much important information concerning what we call our resources, that is to say concerning the manner in which, and the extent to which, it is possible to make physical things, or other animals, or other men, serviceable to us. Ultimately, however (we are told), whatever is serviceable to us is a *commodity*, or, in other words, something capable of satisfying our needs and wants and whims and caprices—and these (it is said) are all irrational. The end of all our action, according to this prevalent opinion, is always either below reason or above it or beside it, but never of it. Our volitions are set in motion by appetite, impulse, a mysterious craving for beauty, or a mystical religious need. Reflection, reason, or principle can only attest and obey these ends. It can never produce or effectively alter any of them; and, strictly speaking, it can never govern them at all.

When I hear these confident statements I am usually at a loss even to conjecture whether the statements themselves are made in tones of jubilation or in accents that are wistful and resigned. No one, so far as I know, is anxious to proclaim himself stupid—least of all a philosopher—yet dozens of philosophers, in theory at least, seem to be eager to announce the utter impotence of all reason and reflection in a host of directions. The greater philosophers of old time, it is true, had a short way of dealing with such professions. According to Plato, the greatest of all crimes was misology or the hatred of reason. According to Leibniz and Malebranche, this vaunted and flaunted irrationalism was very easily explained, although it could not be condoned. The truth is (they said) that the pursuit of reason is austere and even dull. Therefore the lazier among would-be philosophers found romantic or sentimental ideas more stimulating and much more popular.

These summary and aristocratic statements on the part of the great rationalists, however, were a little too superior and more than a little ineffective. To mention no other circumstance, it is sufficiently evident that these same philosophers, with the possible exception of Plato, were more than a trifle uncritical in the way in which they defined and accepted "reason." Thus we find Geulincx [1] saying that we all know what reason is (*satis superque notum est*) because we *are* rational; and this is not much more satisfactory than to say that we all know what life is because we are alive. Malebranche, again, wrote, as he explained, in the name of reason to those who had already accepted the truth of the Christian religion. For him, reason was just the Logos, and although (he said) grace (or *la délectation prévenante*) could work on the heart in many ways that are not directly rational, evidence (which can always be found) is preferable by far to unreasoning faith, reason is consubstantial with divinity,

[1] *Ethica*, Tract. I, ch. i, § 2.

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and the sacred saying is true: "Neminem enim diligit Deus nisi eum qui cum sapientia habitat."

For Geulincx reason was the *amor rationis rectæ*, which was also the love of God. It therefore included all that we see to be, or to be connected with, God's good providence. For Malebranche it was *l'amour de l'ordre*,[1] the eternal enemy of any man's *amour propre*. Consequently the deductions which Malebranche drew from his ideal of reason were but an explication of the divine order of the universe. Reason stood for all high things, and was inexact precisely because Malebranche took so very much for granted.

It is important to avoid this danger, and with the object of seeing (or trying to see) what the danger is, I propose to consider one particular rationalistic system of ethics in some detail. For this purpose I shall choose the ethics of Descartes.

Descartes's ethical theory is sketched in his notable correspondence with the Princess Palatine Elizabeth. This lady who later became abbess of the Lutheran abbey of Herford in Westphalia, was at the time of the correspondence (1645 onwards) a handsome, clever, and learned woman of twenty-seven or thereby. Her father, the luckless Frederick of Bohemia, had died some thirteen years previously in poverty and in exile. He had been the hope of Protestantism when, in 1613, he had married the charming daughter of James of England. He became the most notable victim of the Catholic reaction. Proclaimed King of Bohemia, he was routed by Tilly at White Hill four days after his coronation, and he lost Heidelberg and the Palatinate as well as Bohemia. Elizabeth's mother, the celebrated "Queen of Hearts," whom Gustavus Adophus and Philip of Spain had wooed before she married Frederick, inspired as great devotion as any of the House of Stuart, but in the '40's of the seventeenth century she saw her brother of England in process of losing his throne and his life, a growing estrangement with her eldest son and the recusant marriage of another. In 1648 she had to leave the Hague, where she had lived for so many years in an exile not devoid of distinction, although far removed from affluence.

In short, the Princess seems to have been overwhelmed by the accumulating sorrows of her House. Proudly Protestant herself, she refused the crown of Poland in 1638 because she would not barter her faith, and for the remainder of her life she was fated to see some of her brothers succumbing (with less excuse) to this same temptation, and poverty and sorrow assailing the others.

It is on this note that the correspondence begins. The reason for the Princess's indifferent health, Descartes is sure, lies in her own mind, and is due to the heavy and recurring calamities of her Royal House. While he would not advocate a stoical insensibility—especi-

[1] See his *Traité de morale*.

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ally since a deep concern for one's friends is one of the most considerable departments of virtue—he is convinced that vulgar minds are at the mercy of their passions, while nobler souls, although not exempt from their passions, keep control over them and are able to turn even their afflictions into a fundamental contentment and felicity. For life is short, and our souls are of the eternal.

Our minds, he gently insists in a further letter, are able to keep our imaginations from morbid brooding. Medicine, no doubt, affects our health, but the mind affects it more. Like Kant in a later century, Descartes regarded reason as an instrument of bodily soundness. His own mother, he says, had been *poitrinaire*, and had died of phthisis shortly after his birth, and the doctors had said that he himself would die young in the same way. In his own judgment he overcame the malady by robustly practising the regimen of reason.

Elizabeth replies that these consolations of philosophy, while efficacious in some cases, were with her too much of an effort; and Descartes rejoins that a lady who could diagnose her own mind with the accuracy of which the Princess was capable must possess in herself the remedy which both of them take to be sovereign. "I think," he goes on, "that since there is nothing good in the world, save good sense, that can be called good absolutely, there is also no evil from which some advantage may not be drawn by anyone possessing good sense." A reasoning mind can always find *something* of advantage even in the greatest misfortunes.

Upon this our pair of correspondents set themselves to study Seneca's *De Vita Beata*, and both find him somewhat vague. Nevertheless, Descartes extracts from the Roman much that he believes to be true. Blessedness, he argues, is more solid than happiness, for it is an inward contentment of the spirit that cannot be the gift of fortune. There seem indeed to be two sources of gladness, viz. the things which, like virtue and wisdom, depend upon ourselves, and the things which, like honour, riches, and skill, do not so depend.

Certainly a man who has health and abundance of possessions has, in a way, ampler resources for felicity than another who is poor, sick, and humbly born. Nevertheless, small pitchers may be filled to their full capacity as well as great ones, and this is the only sense of beatitude or of perfection that is relevant to the argument. As he himself has always taught, there are three cardinal rules for attaining such beatitude. The first is to endeavour always to rely on one's own mind; the second is a firm and constant resolution to execute what reason decrees, and not to be turned aside by passion or by appetite; the third is to accustom ourselves to refrain from desiring anything that we cannot attain. There are many desires, it is true, which are not inconsistent with beatitude, but it is better to be frugal in our wishes; and if we do our utmost to choose and to ensue

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what we judge to be best, we have no proper cause for regret if, in the event, we find that our forecast was mistaken. In sum, "the greatest felicity of man depends upon the proper use of his reason."

Elizabeth remains unconvinced. She does not doubt that the value of rational creatures depends upon the exercise of their rational powers, but once again she doubts the efficacy of her mentor's prescriptions. Surely, she says, disease and suffering may impair these very rational powers, and therefore may damage or destroy whatever of felicity is appropriate to them.

Descartes, in the first instance, replies generally that all the greater philosophers (even Epicurus) had looked in the same direction as he looks for sovereign, self-sufficient good. To fortify the mind itself is always man's ultimate remedy. Later he admits that disease or other external cause may affect our possession of reason. In general, however, he maintains that causes of this order affect not the mind itself but our bodily humours, and that bodily afflictions can and should be surmounted. In the end, if we accustom ourselves to depend upon lineage, success, or other privilege, we may find ourselves helpless when the privilege disappears.

To understand these matters, he continues, we have really to go pretty deep. Contentment or serenity, if we feel it, is but a witness within our breasts to the possession of some authentic perfection. Rationally speaking, every pleasure ought to be measured by the degree of perfection from which it springs. This occurs, in fact, whenever we have genuine knowledge of the source of any pleasure. The pleasures of virtue, for example, spring from a clear idea of what our duty is, and so are tokens of this particular rational perfection. And similarly of all mental pleasures in the proper sense, for our ideas concerning our own spirits, although not infallible, are likely to be correct, or very nearly so. It is otherwise with the pleasures that arise from the body. Anger, for instance, may carry with it the joy and sweetness of gratified revenge, but the only perfection in accomplished revenge is a certain superior strength; and strength is but a minor excellence far less admirable than the perfection of restraining our vengeful feelings.

"Consequently, the true office of reason is to examine the proper value of all the goods whose acquisition appears to depend in any way upon our own conduct, so that we are never free to omit the duty of attempting to employ all our powers in obtaining those goods which are in reality the most desirable." In detail, bodily pleasures are variable and brief, indicating services and perfections whose duration is limited, at the best, by our short physical lives, whereas spiritual perfections endure as long as our eternal spirits.

Being further interrogated by the Princess, Descartes asserts that there are four kinds of knowledge which (principally) a man

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who is wise in his living ought to obtain. First, the existence of God, and his infinite perfection and power. For perfection is the true object of love. Second, the superiority of our minds to our bodies, as being nobler and capable of an infinity of incorporeal joys. Third, a proper understanding of the magnitude of God's universe. For if we take our Earth to be specially made for man, we are apt to attribute to other creatures imperfections which they do not have in order to exalt ourselves by comparison, and shall fill ourselves with vague inquietudes and distresses by trying, as it were, to govern God's world along with him. Fourth, the recollection that although each of us is in a manner separate from all others, we do not exist alone, but are parts of the same universe, state, society, or family. We should therefore prefer the general interest to our own private advantage—although always with a proper discretion.

At this point the Princess exhibits a very nice sense of theology, and shows herself her grandfather's granddaughter.

In detail she argues (1) That God's existence may comfort us regarding the afflictions that arise in the course of nature, but not regarding those that spring from the unfriendly wills of other men (2) That if we are assured of immortality, we might be wiser to choose death than simply not to fear it. (For there are many, surely, to whom a new and better life would be greatly preferable to their present miserable existence.) (3) That those who see the universe so very big are, for the most part, very little occupied with God's particular providence in the tiny affairs of men. And (4) that Descartes's principles imply the necessity of making a very intricate reckoning of our own worth in comparison with the worth of others. How, then, can we avoid both the Scylla of arrogance and the Charybdis of excessive humility?

Descartes's replies to these special points are interesting rather than noteworthy. To the first (the Princess cannot assent) he replies with a doctrine of predestination quite as explicit as Calvin's ever was. "Mere philosophy," he says, "is enough to show that the smallest thought could not enter into the mind of any man without God's willing it, and without God's having willed from all eternity that it should enter." Replying to the second point, he says both that we are not assured of eternal *blessedness* and that life is not an evil. It was only the false philosophy of Hegesias that ever maintained the contrary, and Hegesias was condemned to death by Ptolemy because he persuaded men to suicide. To the third point, he replies that God's infinity extends to small things as well as to great; and to the fourth, that a nice calculation of the relative value of ourselves and of others is not required. In general, the public good is a higher and a more glorious thing than our own, and it appeals as such to all nobler minds.

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Taking a wider perspective, Descartes admits that he has often wondered whether it is not better to be ignorantly pleased with superficial joys than to have a sounder understanding of the values of things—and to be the sadder for it. If the sovereign good were mere delectation there could be no two opinions on the subject. In fact, however, the *summum bonum* is virtue or the possession of all those goods which depend on our own free wills. Therefore it is better to have less gaiety and more wisdom. In reality the great joys are serious things, and in their way even sombre. They are quite different from jocund, mediocre, and fleeting pleasures.

I have lingered over this correspondence (which proceeds to take a different turn since the pair fall to discussing politics and Machiavelli) partly because I am enticed by the charm of it, and would like, if I could, to impart a portion of its enchantment, but principally to indicate the extent to which Descartes's rationalism, although studiously restrained compared with most such theories, nevertheless was forced to assume far more of dubious theology and of questionable psychology and metaphysics than might appear to a careless glance.

Descartes's theory, we may say, contains two principal parts, the first being the view that the best things for any man are the things which depend upon his own free, rational, and governing will; the second being the doctrine that a rational and impartial estimate of values is both possible in itself and confirmatory of this general position.

Even if the metaphysics and the psychology of freedom were less of an enigma than they are, it is plain that Cartesian doctrine contains gaping lacunæ. The governance of reason itself, as the Princess saw, depends upon a species of good health, and the arguments which Descartes supplies in support of his general position prove rather that our reason is commonly the strongest part of us than that it has rightful authority. Some at least would look rather to beauty or to holiness for this authority, and others, if they were entirely candid, might admit at least that a question might be made of it. To be sure, Descartes and the Princess agree that the prime duty of a reasoning being is to show himself reasonable in his actions—and, very likely, they were right. As it stands, however, such a statement is a verbal jingle rather than an argument, and (without further support) is no more to be considered than the parallel statement, say, that a modern creature should show himself modern—and neglect the classics.

What is needed, in other words, is an independent and unassailable intuition to the effect that the worth and dignity of being reasonable is in fact superior to all other perfections. Thus the second part of Descartes's theory governs the first; and yet, as we read, we

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cannot help being invaded by the conviction that this ultimate judgment of value (which ought to be strong enough to support itself) is the object of a certain suspicion on the part of its architect who busies himself, in consequence, with the construction of buttresses that do not make for solidity.

Thus we are told that the mind's value (reason being the essence of mind) is greater than that of the body because the mind is immortal and the body corruptible. If so, the mind is more tenacious than the body, but not necessarily better. Again, while it is admitted that the passions are mental as well as reason, it is maintained that reason is independent of the body and that passion is not. Yet it is also admitted, as we have seen, that disease may impair reason. Indeed, all that is finally claimed under this head is that our reasoning powers are less likely to be affected by bodily decay than any others—and this is very doubtful. (One's arteries or one's digestion are effective competitors with one's reason in this affair.) In the main, what we are told is that so long as we are "at home with ourselves" we must be rational and need not be wealthy or esteemed. Consequently it is prudent not to seek what depends upon other men's suffrages or upon fertile seasons. The answer here is tolerably evident. The risks, after all, might not be so very great, and even if they were, the prize might justify them. If a man, let us say, were to argue that he would rather be mad than universally shunned by his kind, are we bound to say that he is talking nonsense simply on the ground that such matters do not depend upon himself, and that it rests with others to treat us as pariahs or untouchables? Is it absurd to say that love is better than reason, if reason indeed depends upon ourselves and love goes out to our fellows?

In short, everything, according to this theory, depends upon the doubtful proposition that reason is better than anything else, better than reputation, better than beauty and love.

It is time now to turn to the other side of this problem. If Descartes, and even the Princess, claimed a great deal (and perhaps too much) for reason, what are we to say of those others who assign it very little (perhaps too little) importance?

In debating this other side of the question I should like to consider the views of those who take the highest ground. The lowest ground, I think, is only a swamp that overcomes the unwary by suction, and since I know of none among the anti-rationalists who takes higher ground than Shelley in his *Defence of Poetry*, I cannot do better, I think, than consider this justly celebrated opinion.

In Shelley's view, the essential contrast in these matters is between the creative imagination which expresses itself in poetry and the merely receptive or calculating reason. "According," he says, "to one mode of regarding those two classes of mental actions, which

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are called reason and imagination, the former may be considered as mind contemplating the relations borne by one thought to another, however produced; and the latter, as mind acting upon those thoughts so as to colour them with its own light, and composing from them, as from elements, other thoughts, each containing within itself the principle of its own integrity. The one is the τὸ ποιεῖν, or the principle of synthesis, and has for its object those forms which are common to universal nature and existence itself; the other is the τὸ λογίζειν, or principle of analysis, and its action regards the relations of things simply as relations, considering thoughts, not in their integral unity, but as the algebraic representations which conduct to certain general results. Reason is the enumeration of quantities already known; imagination is the perception of the value of those quantities both separately and as a whole. Reason respects the differences and imagination the similitudes of things. Reason is to imagination as the instrument to the agent, as the body to the agent, as the shadow to the substance."

In short, we may say, imagination (according to Shelley) is the only authentic *maker*, and poets (not versifiers only, but poets in the broadest sense) are, as he says, "the institutors of laws, and the founders of civil society, and the inventors of the arts of life, and the teachers who draw into a certain propinquity with the beautiful and the true that partial apprehension of the agencies of the invisible world which is called religion." Reason can only follow, it cannot direct, this productive imagination; and (oddly enough when we remember Descartes's claims for it) reason is stated to be incapable of appreciating values, this office also being ascribed to the imagination which alone is attuned to "planetary music" or "impanneled by Time."

It follows at once that imagination gives substance and vitality to ethical science itself. "The whole objection of the immorality of poetry," Shelley says, "rests upon a misconception of the manner in which poetry acts to produce the moral improvement of man. Ethical science arranges the elements which poetry has created, and propounds schemes, and proposes examples of civil and domestic life; nor is it for want of admirable doctrines that men hate, and despise, and censure, and deceive, and subjugate one another. But poetry acts in another and diviner manner. It awakens and enlarges the mind itself, by rendering it the receptacle of a thousand unapprehended combinations of thought. Poetry lifts the veil from the hidden beauty of the world and makes familiar objects be as if they were not familiar; it reproduces all that it represents, and the impersonations clothed in its Elysian light stand thenceforward in the minds of those who have once contemplated them, as memorials of that gentle and exalted content which extends itself over all

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thoughts and actions with which it coexists. The great secret of morals is love, or a going out of our own nature, and an identification of ourselves with the beautiful which exists in thought, action, or person not our own. A man to be greatly good must imagine intensely and comprehensively; he must put himself in the place of another and of many others; the pains and pleasures of his species must become his own. The great instrument of moral good is the imagination; and poetry administers to the effect by acting upon the cause. Poetry enlarges the circumference of the imagination by replenishing it with the thoughts of ever new delight, which have the power of attracting and assimilating to their own nature all other thoughts, and which form new intervals and interstices whose void for ever craves fresh food. Poetry strengthens the faculty which is the organ of the moral nature in the same manner as exercise strengthens a limb."

Thus even in a corrupt society poetry sweetens what is in haste to decay. "Its voice is last heard like the footsteps of Astræa departing from the world." It is therefore far more useful than that "utility" which would-be rationalists, to Shelley's way of thinking, make a fetish of. As he says: "Poets have been challenged to resign the civic crown to reasoners and mechanists on another plea. It is admitted that the exercise of the imagination is most delightful, but it is alleged that that of reason is most useful. Let us examine, as the grounds of this distinction, what is here meant by utility. Pleasure or good, in a general sense, is that which the consciousness of a sensitive and intelligent being seeks, and in which when found it acquiesces. There are two kinds of pleasure, one durable, universal, and permanent; the other transitory and particular. Utility may either express the means of producing the former or the latter. In the former sense, whatever strengthens and purifies the affections, enlarges the imagination, and adds spirit to sense, is useful. But a narrower meaning may be assigned to the word utility, confining it to express that which banishes the importunity of the wants of our animal nature, the surrounding men with the security of life, the dispersing the grosser delusions of superstition and the conciliating such a degree of mutual forbearance among men as may consist with the motives of personal advantage."

"Undoubtedly the promoters of utility in this limited sense have their appointed office in society. They follow the footsteps of poets and copy the sketches of their creations into the book of human life. They make space and give time. Their exertions are of the highest value as long as they confine their administration of the inferior powers of our nature within the limits due to the superior ones."

But "the production and assurance of pleasure in this highest sense is true utility. Those who produce and preserve this pleasure are poets or poetical philosophers."

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In other words, they are *not* rationalistic philosophers; and Shelley's reasons, on the whole, may be reduced to three. Firstly, reason is not productive, and must follow, not guide, what is productive. Secondly, reason is incapable of appreciating the highest values or the authentic good. It is but a calculator of animal needs and desires (or, at the best, of vulgar comfort and security). It can never, as Descartes supposed, have for its true office the exposure of the hollowness of these overrated objects of desire. Thirdly, Shelley is at odds with Descartes on the central point of freedom. According to the English poet, an ideal is the more sacred in proportion as it does *not* depend upon human volition, but has instead, to wait for inspiration. "Poetry," he says with emphasis, "is not, like reasoning, a power to be exerted according to the determination of the will. A man cannot say 'I will compose poetry.' When composition begins inspiration is already on the decline."

If we pursue these three points we shall have advanced, I think, some little way towards the understanding of our problem; and I propose to treat the three points in reverse order.

(1) On the whole, I do not see that the voluntariness or the involuntariness of an action has any definite bearing upon the action's goodness or badness. There are so many involuntary disvalues in our lives, such as growing old or being liable to a common cold, that Shelley had certainly no right to applaud poetry simply on the ground that inspiration is involuntary. Nevertheless, it is possible, as we have seen, that the greatest goods *are not* voluntary. To return to an earlier example, if, as many believe, human love and personal affection are the greatest of goods that men may experience, then (even granting that the involuntariness of love has sometimes been overstated, as by Kant) it is quite beyond question that love tends to be doubly involuntary, partly because it is imprudent to hope that we are likely to love anyone by trying to do so, partly because love is unlikely to be a *very* great good unless it is reciprocated; and this return of our love depends upon the other party. Similarly, the death of those dear to us is among the greatest of human afflictions, and is not, in general, affected by voluntary action on our part. Even if what is voluntary *should* always be good, what is involuntary *may* often be better.

(2) The second point of contrast, however (*i.e.* our capacity for a rational appreciation of values), is manifestly cardinal. Indeed, we may say with some confidence that the two parts of ethical theory which govern all the others are, firstly, the theory of goodness or value, and, secondly, the theory of justice or equity. Moreover, we may also say (I think) that the first of these is also the chief. We regard it as unfair that two persons unequally guilty should receive the same penalty, or that two persons who have deserved equally

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well should receive, the one honour and the other contumely. Yet unless we also knew that *good* and *evil* were being distributed in this way there would be no meaning in any such opinion. There would not be equity but a fundamental iniquity in the infliction, let us say, of pain *impartially* upon a number of *innocent* people, and there would be a mere pretence of justice if each of the innocents had boiling oil heated for him to precisely the same temperature. In other words, our ideas concerning what is just *presuppose* certain ideas concerning what is good and what is evil.

Accordingly, unless goods and evils come within the cognizance of the rational faculty, there is no place at all for any genuine rationality in ethics. Yet this, the most important point, is the point on which most philosophers take sides violently with little in the way of exact and discriminating discussion. Our irrationalists in particular commonly begin by assuming that values are outside the province of reason, or else offer some tarradiddle to the effect that reason cannot move us or stir our loyalties. Values, they say, depend on impulses and private feelings. Quite simply, they are parts of our constitution, and all that can be said with significance is that we call anything good if our hearts are set upon it.

In a different way, Shelley makes the same fundamental assumption, as everyone must who is determined to set art or beauty or religion altogether above logic and reflection. In Shelley's view the function of reason is simply to calculate or to mechanize like an abacus. What is more, he appears to believe that animal wants and economic comforts are the only things that can be calculated (so far as human lives are concerned), and to declare that the greater and diviner goods, such as love, and the poet's Æolian lyre, and the footsteps of Astræa, are not of this order. They are beyond all reckoning, and our reason cannot have the smallest effect upon them.

I have no space in which to debate with adequacy this large and fundamental question, but I should like to offer two considerations which should do something, I think, towards clarifying the issue and towards suggesting the character of a proper answer.

Firstly, then, I should like to call attention, once again, to the implications of the argument concerning equity which I have briefly sketched already. While there are many who profess to doubt the rationality of values, I do not think there are any who seriously deny the reality of equity and fairness. Some men do treat themselves and their fellows justly. Others do not; and the assignment of what is fair and equal is plainly a rational question to which reflection is appropriate, and pre-eminently so. What I am arguing, then, is that equity has no meaning at all unless it includes, not merely a sentiment, or a passion however exalted, concerning good and evil, but also a reflective estimate of these. If a man cannot reflect about

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good and evil, how can he reflect about the equity of his distributions? He is distributing he knows not what, and yet he is equitable only if he distributes good and evil in a way that is rationally appropriate.

In the second place, I would urge that every probable analogy points in the same direction. At the physiological level of action, as Sir Henry Head has recently shown, what happens is that there are certain levels, patterns, or schemata of response (such as spinal, thalamic, cortical), and that, for example, a cortical pattern may control or inhibit a spinal, *thereby* controlling or inhibiting the muscular response of the spinal pattern. If there is any mystery in this circumstance, it is the commonplace and standing mystery of all muscular action.

Plainly the analogy here extends also to the relations between a reflective and some impulsive, sentimental, or otherwise unreflecting pattern. There is no greater mystery in a reflective pattern controlling an unreflective one than in a cortical pattern controlling a merely spinal one, and thereby controlling the actions which, apart from such control, would normally flow from the unreflective pattern. To hold, as many have held, from Spinoza to Mr. Russell, that nothing but an impulse can control or inhibit an impulse is contrary to every physiological and psychological analogy. It is like saying that nothing but a muscle can inhibit a muscle, and inferring in consequence that what physiologists call a "higher" neutral pattern cannot inhibit a lower.

What we mean by reason in ethics is simply the fact that human conduct may attain a reflective level, and what I am arguing is that it is utterly inconsequent to maintain that this reflective level (which obviously occurs) should be held to be only superficially reflective on the ground that the actions which may be reflectively performed might, severally, be performed from impulse or from sentiment. It might be otherwise, indeed, if the relevant contrast here were (as Descartes supposed) between something invincibly carnal, on the one hand, and, on the other hand, something entirely different which is both spirit and "reason." In that case spirituality and reasonable reflection might not work as leaven does, but might remain hard, impenetrable, and very precious, like a diamond in the midst of rubble. It is not this dualism, however, that is actually to be found in man (whatever may be true of dualism as a metaphysical theory). Indeed, the mere admission that man is at least economic and not simply animal or carnal in his psychical pattern is sufficient to establish the point. An economic as opposed to a carnal appetite is at least as much reflective as appetitive. Yet reflection, as we have seen, is not in any way limited to this economic function. For the examined life is possible to man, and the examined life is not a mere reckoning of the means which are instrumental to irrational ends.

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(3) To say this is also to say that the third of Shelley's main contentions is mistaken. It is not true that reason is not productive within the sphere of human action, or that it is a sort of mechanical cash-register and nothing more. By reflection we do produce our sciences, and, let us hope, many of our civil laws and political institutions. I do not say that these are the creatures of some mysterious faculty of "reason," abstract, celestial, and aloof. I say they are evolved from a psychical schema characteristically and thoroughly reflective—*μὲτα λόγου*, not simply *κάτα λόγον*. And this is true even of poetry and of human love. Composition is art rather than "reason," and an original poetic afflatus which was wholly irrational would be as absurd as poetic expression incapable of finding a single coherent phrase. Our love, again, is the love of a rational creature. Irrational love is the secret neither of ethics nor of anything human. Geulincx, indeed, when he spoke of virtue as the *amor rationis rectæ*, may in a measure have confounded close resemblance with identity. But love and reason, as Plato saw, are not in principle inimical. On the contrary, they go together, of necessity and always, in anything that is either truly human or authentically divine.

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THE LOCATION OF PHYSICAL OBJECTS

OLAF STAPLEDON, M.A., PH.D.

COMMON sense holds that a physical object is confined to a definite region of space, and that it endures through a definite period of time. It scatters effects through other regions and periods, but *it* is the cause of those effects, and is just where it is and not everywhere. Physically its existence may entail other objects, but logically it entails nothing whatever beyond the limits of a certain volume.

Professor Whitehead, on the other hand, maintains that the physical object as distinct from its "effects" is an abstraction, that what is real about it is a system of modifications of happenings throughout all regions, that logically the concept "physical object" entails more than the volume in which it is said to be located.[1]

Professor Whitehead's writings are perhaps more pregnant than lucid and consistent. In this paper I do not pretend to be accurately expounding his theory of physical objects, but, with an eye constantly on perceived nature herself, and an ear ever attentive to Professor Whitehead's suggestions, I attempt to elucidate some points which his critics have perhaps failed to understand. But it is, of course, very probable that he himself would reject my interpretation.

Let us seek precision by tackling a time-worn problem, namely the analysis of "this penny." And first let us consider what can be meant by saying that the penny is or is not "simply located." However location is defined, and whatever space-time system we adopt, to say that the penny is simply located means that all that is logically essential to the being of a penny has certain specific relations (called shape and position) within our defined system of location, and that it has no others. To say that the penny is not simply located means that the essential being of the penny does not occur merely within the one defined volume which is its location.

Common sense knows the penny as a circular flat disc of bronze, situated in my hand, in this room and city. It bears a certain moulded pattern. It is hard, cold, brown. It rings when I drop it. It has a metallic smell, and a taste.

Berkeley would protest that it is none of these things, since, for instance, to one man it is circular, and to another oval, and to another oblong. These characters cannot co-exist. Which is the

[1] This is the view expounded in a somewhat sporadic manner throughout *Science and the Modern World*.

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real one? Brownness, moreover, depends on the lighting and the observer's eye. Coldness is relative to the state of his fingers, so that cold to me may be warm to you. And so on. Berkeley, as we know, concluded that there is no single thing to be called a penny, but only a system of perceptions which logically entail for their occurrence our perceiving minds.

Sophisticated common sense replies with the distinction between primary and secondary qualities. Size, shape, and hardness are supposed to be characters inherent in the physical object itself; while colour, cold, sound, scent, and taste are results of the co-operation of the object and the observer's mind. Primary qualities inhere in the object whether anyone knows them or not. Secondary qualities unperceived are non-existent, though some of their *causes* are certain never-perceived primary characters of the object itself, such as the rhythmical activity of atoms and electrons.

The ground of this distinction is said to be that while primary qualities are constant in the experience of all observers, secondary qualities vary with the situation and condition of our sense organs and the transmitting medium. How can colour itself be supposed to exist in the object, when its perception by the subject is the end-result of a complicated chain of physiological events, whose nature is wholly unlike that of the ethereal vibrations which stimulate the retinæ? Moreover, since colour entails for its existence a vibration, it cannot be a character of anything briefer than one pulse of that vibration. How then can it be a character of an object which (we are told) must be supposed to have existence even in periods of any degree of brevity?

Those who assert the simple location of primary qualities sometimes fail to distinguish between shape and the characters which contrast a shape from that which is outside it. Shapes, to be perceived, must be perceived either as coloured shapes against a background of some other colour, or as tactual shapes. Colour and tactual "pushiness" are sensory characters. Shapes, to *be* shapes, must be delimited by *some* kind of character, whether sensory or some insensible character from which sensory character is "derived." The problem of shape is distinct from the problem of sensory characters. But the problem of perceived shape is the same whether the sensory character of the shape be visual or tactual. Shapes of pushiness are no more truly constant than shapes of colour.

For not only may one man see the penny circular while another sees it elliptical, even touch has its discrepancies. Crossed fingers may record two pennies instead of one. Fingers and tongue give conflicting reports as to the shape and size of dental cavities. A stone in the shoe is bigger than the same stone extracted between the finger-tips. Changes in the proportions of a hand through damage

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or disease must result in changed tactual percepts of the shapes of objects. Therefore in respect not merely of some but of all sensory qualities it may seem necessary to distinguish between the character of the object itself, as a simply-located existent, and the character of its perceived appearance.

To say that the penny itself has a certain shape does, indeed, mean something. From various perceived shapes we infer that there exists a physical object of a certain physical shape independent of our percepts. This physical shape is constituted (we are told) by a system of relations, both within the penny itself and between the penny and its environment. Its circularity, for instance, consists in the fact that from a certain point within it all distances to the circumference are equal. Also, in a suitably chosen hole the penny could be rotated without ceasing to fit the hole. This does not depend on anyone's percept of circularity, but only on the objective relations of the penny and the hole.

But this property of being rotatable without ceasing to fit *is* not shape, it is a consequence of shape. And if the penny and the hole really have physical *shape*, that shape must be inferred from perceived shapes. Now if the physical shape which we infer is a shape of resistance, or "pushiness," should we not go on to infer that it is also a shape of colour, and that sound and other sensory qualities, though they may not occur in definite shapes, are yet characters of the physical world? Common sense and some philosophers answer no. For, they say, while there is evidence that things affect one another through their primary qualities, there is no evidence that secondary qualities are ever causally efficient. This contention is unreasonable. Why should whatever is simply located necessarily have causal efficiency? If colour were to be proved (for other reasons) to be simply located, the question would still remain as to whether it were causally efficient.

Moreover, as things stand, what reason have we for saying that colour is not causally efficient? Supporters of this view tell us that, when light seems to take effect on a photographic plate, what is really causally efficient is not the actual secondary quality, light, but certain vibrations of resistance, which may co-operate with a nervous system to *cause* visual light. But they are led to this conclusion only because they have found it most convenient to work out their causal system solely in terms of pushiness. They forget that vibrations are postulated for the very purpose of reducing colour factors to primary qualities. They forget also that there is no logical necessity that causation should take the form of our dynamics. Theoretically, a causal system in terms of colour instead of pushiness is possible; but it would be a system isolated from the rest of our system of causation, which is based on dynamics. Compared with

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dynamics, it would be a system of narrower application. Also, its data would be less easily measurable. But it would be quite a genuine causal system. Let us not forget that the causal system in terms of pushiness has to fill in its gaps by postulating unsensed pushiness, often of a microscopic order. Thus, for instance, the whole theory of electro-magnetism is a system of unsensed pushiness, and without it, where would physics be? Similarly, then, the causal system in terms of colour would be fully entitled to help itself out of difficulties by postulating unsensed colour.

But the question of causal efficiency is not really relevant to our discussion. All or none or some sensed qualities might be causally efficient, and yet the question would remain as to whether any of them were simply located. And it is easy to see that, whatever be the truth about shape, the simple sensory qualities in which perceived shape is embodied are all on the same footing in this respect.

The upshot is that the useful practical distinction between primary and secondary sensed qualities must not be interpreted as an absolute distinction between characters inherent in the physical object and characters resulting from the co-operation of the object and the nervous system or the mind. Protest against this false distinction is the source of Professor Whitehead's crusade against "bifurcation." But he protests also against a more subtle form of bifurcation, which distinguishes on the one hand all sensory qualities, including perceived shape, and on the other hand the inferred characters of the object itself, including physical shape. In this kind of bifurcation the pushiness causal system is but our manner of *symbolizing* to ourselves the actual physical causal system, whose elements are not pushiness, but characters which cannot themselves be sensed by us. From this view it would seem to follow that perceived *shape* also is only our manner of symbolizing to ourselves actual physical "shape" which cannot be directly perceived by us, and may be wholly different in essence from perceived shape, and so would scarcely seem to deserve the name "shape" at all. Thus it may be claimed that we have direct acquaintance only with physical nature's mental effects in our minds, and that, while we can indeed infer from the order of these mental effects to the order that occurs within nature herself, we cannot possibly gain any knowledge of the actual qualities that embody this order in the physical world.

Professor Whitehead, however, insists that nature *is* that which we experience in sense-perception. All that anyone really does experience in sense-perception is in physical nature—somehow. And though we may infer from our sense-experience to unperceived and even unperceivable features of nature, these features must ever be of the same stuff as those which we perceive. Of that which is "behind the veil of perception" we know nothing. Indeed, to regard

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our sensed field as a veil, hiding something other than itself, is to pose an unreal problem. A careful examination of the nature of the sensed field banishes this illusion that it is a veil and reveals it as a deep vista into nature herself.

If our inference from immediate sense-perception to physical nature leads us to deny nature all the qualities that we perceive in her, it is more likely that there is something wrong with our inference than that the qualities given in perception are wholly illusory. Common sense itself is the outcome of past inference, or at least of what Mr. Bertrand Russell calls "physiological inference" in the past; and we all agree that common sense may err. The claim is that it erred right at the outset in its *interpretation* of sense-perception as implying the simple location of physical objects. The bifurcation theories, having acquiesced in this fundamental error, were *therefore* forced in the end to deny nature all the qualities that we perceive in her. What is needed now is to start afresh with our immediate acquaintance with nature, eliminating all the products of past inference which we so easily mistake for present immediate acquaintance. We have erred in seeking merely to purge our view of nature of all those so-called "subjective" elements which cannot be reconciled with a certain *theory* of the status of physical objects. What is needed is to reconstruct our theory from the bottom, so as to make it accommodate as ontologically objective all that we really do apprehend in sense-perception. And we must begin by recognizing that what we really do apprehend in sense-perception is not qualities simply located but qualities having "direction," qualities whose essential nature is the nature of an aspect, existing "in a place, from a place." In this view, then, the simplest concrete thing is an aspect. The analysis of an aspect yields, not an existent causing an effect in another existent, but an abstract potentiality of expression which can only be concrete in relation with another abstract potentiality, namely a potentiality of reception.

But if all that we perceive really is in nature, what of perceptual illusion? If on a dark night a man mistakes a bush for a cow, is the illusory cow a part of nature? No. What *is* a part of nature is a certain sensed pattern, having direction. What is erroneous is the mental act of judging this pattern to entail all the characters which make up a cow.[1]

We begin, then, with a provisional realism, with an epistemological realism which might if necessary be combined with metaphysical idealism. Nature, we declare, is that which is perceived, and our perceiving is not constitutive of any part of her. Yet just

[1] Or, if we accept Mr. Bertrand Russell's theory of "physiological inference," what is erroneous is the physical act of behaving as though there were a cow, without any conscious inference whatever.

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possibly that which is perceived might turn out to be itself in some sense psychical. That is another problem.

Having adopted a provisional realism, we are faced with alternative possibilities. We may either regard secondary qualities as in fact primary qualities simply located in the volume called by common sense the physical object, or we may regard even the primary qualities as essentially secondary, not indeed as involving mind as a causal factor, but as being not simply located. This is Professor Whitehead's view. The hardness of the penny *is* its resistance to pressure, and there can be no resistance without attack. The shape of the penny is a system of potential resistances inferred from our tactual, kinæsthetic, and visual sensa. The defined circularity of the penny is the formula of potential and actual resistances. And resistances without opposed forces are nothing whatever. The penny, in fact, simply *is* the systematic difference that it makes in the world. This expression is elliptical. More precisely the penny *is* a system of characters pervading the world. Each of these characters logically involves not only a place of location but a direction. Colours, sounds, and also shapes (which are systematic hardnesses and systematic distinctions of colour) can only exist "in a place, from a place." Sound does not involve hearing, but it involves more than a source. Shape does not involve touching and seeing, but it involves opposition, whether to pressure or to rays of light. It involves also a system of points of view, an environment which "prehends" it, a world throughout which it *is* a pervasive influence.

Perhaps we shall be told that since this account makes sensory and perceptual characters relational, and since relation involves relata, sense characters must involve *some* character simply located in their source—in fact, in the simply located physical object. But there seem to be two kinds of relation. There is the relation which is logically dependent on the nature of self-subsistent relata, and there is the relational whole whose parts are not logically prior to the whole. Such, in certain respects, is a biological organism. And such, in this theory, is a sensory character, and equally a perceptual shape. All that is simply located in the "source" is an abstract "potentiality" of sensory character and of perceptual shape. And the simply located physical volume itself is but an abstract formula for the correlation of perceived, and not simply located, shapes.

To sum up this matter, it is true that the system of characters which constitutes the penny "radiates," so to speak, from a source which can be defined geometrically as a certain volume, by extensive abstraction from its perceived shapes. But the result of this process of abstraction is, not indeed something whose existence is merely mental, but something which, though a real feature of the penny, logically could not exist by itself. Shape must be the shape of some-

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thing. It consists in a boundary between two different characters. And, as we have seen, all sensed characters, such as colour and hardness, logically involve more than simple location. To suppose that therefore there must be some other, insensible, simply located character, is to *assume* that character can be simply located. It is to assume, in fact, that *substance* must be simply located. For Professor Whitehead, if I understand him, every substance is pervasive of all others. Each has a simply located "prehension" of all others, which is a centre of the influence that constitutes it; but *it*, as a systematic character, is pervasive.

But away with all this sophistry! The penny is surely something or other definite. Then what is it? It is not the ringing sound, for that fills the room, and the penny, we say, does not. Yet in just the same sense its brown colour fills the room. And even its sensory shapes pervade the room, each in a particular direction. Let us assume for the moment that at least it actually has a real physical shape, that *it* is simply located in that flat circular volume. Dare we assert that this actual round flat penny is also smooth and hard? No, for the smoothness and hardness are attributes only of a macroscopic view of it. Microscopically it is indeed a disc, but neither smooth nor hard, since it is a vibrating and penetrable whiff of atoms, or perhaps of electrons and protons. The Australian nation refuses to admit Chinese immigrants. Should China therefore suppose the Australian nation to be a compact mass of human flesh?

But Australia *is* the Australians. Is not the penny, then, its atoms, or electrons and protons? Surely that particular electromagnetic system occupying a certain volume is what it is, whether external pressure is brought to bear on it or not. It is an intrinsic system, though it has external relations. True, but that system has only simple location in virtue of its external influence. Abstract its influence, and you deprive it of that in respect of which it is located. Further, it loses its external shape, its convexity, retaining only its internal concavity, which, moreover, is an expression of the internal system of influences which compose it. It is not enough for the critic to distinguish between the external and internal aspects of the penny, and protest that the internal is logically independent of the external. He must show that the internal system is, or has, a substantial simply located core, or system of cores, for instance a system of simply located atoms, or electrons and protons. But this he cannot do. Electrons and protons are said to be electric charges. And atoms themselves are systems of electric charges. In fact they are resistances and attractions. And surely resistance and attraction each logically involves more than a simple location. Indeed, atoms, electrons, and protons are not simply located substantial causes having as their attributes or effects their fields of force. They *are*

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their fields of force. And it is of the essence of a field of force that it exists "in a place from a place." Thus our attempt to isolate the penny and find the heart of its field of macroscopic influence has but led us into a more microscopic field of influences, each of which is quite "heartless." It may be protested that at least each electronic field of force has a definite location within the penny and within a certain atom. True, but only superficially true. For the student of atoms it is convenient to single out the sub-atomic aspects of the electron's field of influence; but he is only able to do so because that influence also pervades a far wider region, because in fact the electron is *everywhere* available for knowledge.

Clearly then by "this penny" we must mean, not an unknowable cause which has a certain system of physical influence, but just that system of influence itself. Similarly, when we say that a man has a certain character, we must mean that he behaves in certain ways in the world. In a very important sense a man is what he does. He is not an abstract potentiality of action. He is "the difference that he makes to the world." Or better, he is a certain system of occurrences in the world. And just as a generous, pettifogging, or arrogant character involves a world to be generous, pettifogging, or arrogant in, so a penny, to be brown, hard, circular, must have a world to be brown, hard, and circular in. And if you suppose that these sensory characters are but "appearances" of some other insensible and "actually physical" characters, which are simply located, you are supposing something for which there is no ground whatever save the prejudice that substance must be simply located. Every physical character known to us straddles over from one locality to another. If you seek its simple location by dissecting the straddle, the character vanishes. In fact, it almost seems as though the only thing that has simple location were locality, or more precisely a "locus" simply located within a system of location.

But the conviction that a substance and its character must be simply located demands more detailed discussion. Let us first express it as clearly as possible. We must not, it will be said, confuse cause and effect. The man's deeds radiate from him, but he himself, the cause of those deeds, is simply located. The penny's influence pervades the room, but the penny itself is on the table. The electron's field of force pervades the atom and the universe, but what we mean by "the electron" is the simply located source of that system of influence. Clearly there must be something other than "influence" somewhere. There must be substantial causes of influence. If *A is* just the system of "*A* influence in *B*, *C*, *D*, and *B is* just the system of "*B* influence" in *A*, *C*, *D*, and so on, there is no substance in any of them. As well suppose that each member of a club *is* just the impression that the other members have of him.

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Clearly, though everything is influenced by other things, it must also be something in its own right, or there would be nothing to be influenced, and nothing to emit influence.

This argument, though so clear and persuasive, is really beside the mark. It assumes the very thing it would prove, namely, that what is real is not influence but a supposed source of influence. In fact, the whole question is begged by the word "influence," which implies a cause distinct from its effects. The truth is that in this matter we know nothing of causes; we know only all-pervading systematic functions. To be known at all a thing must consist of influence. Behind influence lies, not even the unknowable *ding an sich*, but further influence. We probe the penny, and find only intersecting fields of force. We seize upon a certain electron and seek to discover what is located just precisely there and not throughout the field of force; but what should we find if we could thus occupy the electron itself, considered as cause of its field of force? Possibly the electron is not the ultimate physical unit; possibly it is resolvable into still more microscopic systems of influence, even as the atom has been thought to be resolved. Possibly, on the other hand, even the resolution of the atom into electrons is not justified. Heisenberg argues that the electron within the atom is no distinct entity. Atoms and *isolated* electrons are real; electrons within an atom are mere figments. Let us suppose, however, that the electron really is a physical unit, and that, on the other hand, it would not resolve into still more microscopic systems of influence. What, then, should we find if we could occupy it? We should merely find ourselves occupying its point of view; we should possess, not the electron's simply located heart, but its view of the universe. To be any finite thing *is* to have a view of other things and to make a difference to other things. That is just what a man is too,—a view and an influence.

To defend this theory we must seek help from Professor Whitehead's account of objects and events. And since he is often very obscure on this important subject, and even perhaps inconsistent, we may easily miss his essential meaning.

Common sense thinks of physical objects as limited by space but not limited in quite the same sense by time. They have simple location in space, but in a sense they endure throughout time. The ultimate substance or stuff of every object is thought of as persisting for ever. Events are said to happen to objects, and are caused by objects. They are attributes of substantive objects. The river of time flows over objects, making no essential difference to them. Professor Whitehead, however, declares that what is substantive is not objects, but events, and that objects are adjectives of events. This is no mere verbal difference. Events are essentially passage, and in this view passage is of the very nature of substance.

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There may be some ultimate metaphysical sense in which all passage is an attribute of an eternal substance. But within the universe of discourse of physical nature what is substance is essentially not static but the passing event. Objects, on the other hand, endure. Not only are they characters which "subsist" eternally, in a logical sense, but also they have physical "existence" so long as they are the enduring characters of passing events.

The substantial activity which is the long event of Cleopatra's needle is essentially a case of passage, but the object, the form, of Cleopatra's needle endures throughout its history. Long ago there was no needle; some day there will again be none. In this sense the object endures through a certain period, or in the life of certain events, and in a certain place. But also the object is ingredient throughout the whole spatio-temporal universe. It *is* wherever its "influence" is. It has not merely simple location, for it *is* its "influence"; and influence involves more than simple location. It is a certain system of sensory characters, of lesser objects which Whitehead calls sense-objects; and not one of them can be merely simply located. The needle, we say, consists of a vast system of atoms, or of electrons and protons. These also are objects, called scientific objects. They also are characters ingredient in events. Their status is essentially the same as that of the perceptual object and the sense-objects of which it is composed. Each electron is ingredient throughout the universe.

But what of events? What Professor Whitehead means by an event is far from clear. But a certain quite precise meaning of "an event" does seem to be involved in his theory, even if, perhaps, some of his sayings are not consistent with that meaning. An event is said to be any bit of the life of nature. There is a total event which is the whole life of nature, and this may be analysed into lesser events limited both spatially and temporally. But an event is not simply a position or volume in space-time. For an event has essentially passage, and space-time itself has not passage. It is but an abstraction from the passage and extension of events. Moreover, "an event," we are told, "is qualified space-time—or rather the qualities and the space-time are both further abstractions from the concrete event." In fact, the event *has* spatio-temporal relations; it *is not* a bit of space-time. Events, indeed, are continuous with one another in four dimensions, but the dimensions emerge from their relationships. Again, an event has character, which distinguishes it from other events; certain objects are located in it. Yet each of these objects is also ingredient throughout the universe. And the event itself holds together within itself the influence of all other events. It is said to "prehend" within itself all objects of the universe. It *is* the "prehension" of all other objects, and so of all other events.

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An event without character is an abstraction. To be an event at all it must consist in a certain pattern pervading the universe, and also of a universal view prehended in a certain locality. It must, so to speak, radiate and receive objects. But clearly an object not ingredient in events is also an abstraction. It has only logical subsistence. An object *is* the character of passing events, though that character cannot be confined to a simple location. An event, on the other hand, *is* a part of the charactered passage of nature.

The relations of events to one another are in a sense internal. The character of each is determined by the others. On the one hand the character of each is ingredient in all the others. It initiates all-pervasive objects. But on the other hand it is itself an aspect of the universe. Thus paradoxically the character *of* an event is not simply located; what is simply located is its panorama of the universe. This only looks foolish if we *postulate* the simple location of characters. An event is a focus of and a source of manifestations. Each event is what it is because of its position within a wider system.

We have considered objects and events; what of abstract volume? Clearly in a sense a volume is simply located. By definition it *is* a mere locality. Yet even a volume itself involves more than the simple location of itself. Or better, one simply located volume involves others. You cannot have an outside without an inside. Moreover, internally, a volume consists of part volumes, each of which prehends the rest. Any volume *is* the system of its aspects in all other volumes within it and without. A volume, or shape, is not something which is logically independent of other volumes or shapes. On the other hand, a volume, or shape, *is* just a simple location within a space-time system.

This view of physical nature is not, as some declare, a "barren monism." It does not, if I understand it, mean that the only concrete real is the whole of things, and that the parts are mere adjectives of the whole. On the contrary, the most minute event is itself a substantial activity, an active influence in all other events. It is not true, though the critics assert it, that in this theory everything is everything else, and nothing anything in particular. Everything *is* not everything else, though in an important sense everything physical is *in* everything else, pervasive of everything else. The whole of things, far from being the one reality of which the parts are mere adjectives, is made up of real parts, namely of concrete events. But the kind of reality that an event has is that it contributes character to all other events, and receives character from them. What is simply located is not the character which we say the event "has," for that is ingredient everywhere. On the contrary, what is simply located is the event's prehension of character from all other events. On the human plane, what is simply located is not my

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character, but my view of the universe, or better, in Whitehead's language, the prehension of the universe in my bodily event. This leads to no "barren" monism, but to a monism decently balanced by pluralism. Everything is in everything else, but each thing *is* in its own right; and each thing enters into everything else in a perfectly definite manner, such that simple location has still a meaning, though not the naïve meaning assigned to it by common sense.

This whole inquiry may be summarized as follows: There are certain things that can with some strictness be said to be simply located, but they are all abstractions. One is mere "empty" position or locus or volume in a space-time system. If anyone asks what it is that occurs just *in* that volume and not elsewhere, the answer once more is "only abstractions." There occurs in the volume a mere *potentiality* of sense characters, and a mere *potentiality* of mechanical causation. For the volume itself, considered as simply located, is but an abstract potentiality of prehensions in other volumes. The only other simply located occurrence is the event's prehension of the rest of the universe. Concrete objects, however, involve more than simple location. The simplest sense-objects entail intercourse, and are in a place from a place. The perceptual object, if you mean by that phrase a system of sense-objects, is not simply located. If you mean the geometrical core of such a system, the perceptual object is indeed simply located, but it is an abstraction. It alone has none of the characters which in fact we impute to perceptual objects. The scientific object, if you mean by it a quasi-perceptual object or system of quasi-sense objects, is not simply located. But if you mean the geometrical core of such a system, it is simply located, but is an abstraction. What is concrete is influence, not the "source" of influence. An event, if you mean by an event a mere position or volume in a space-time system, obviously is simply located. But such a mere locality is highly abstract. If you mean a factor in the substantial activity which is nature, having passage, contributing character to the universe and prehending it, the event is not simply located. Its location and shape is an abstract from it.

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THE PHILOSOPHY OF SOCIAL LIFE

II. ECONOMIC ORGANIZATION

C. DELISLE BURNS, M.A., D.Lit.

Only one adult in a hundred gets his food and clothing without doing anything directly in exchange for them. The other ninety-nine form active parts of the system of relations in society which will be called, in what follows here, economic; and even the one in the hundred who does not give, takes something, as children and imbeciles take, out of the store of services which are economic life. Boots and bread are but the bridges over which one man is connected with another, through services exchanged. The philosophy of social life, therefore, must "place" these economic relations in the whole complex unity of human experience. The science of economics analyses some of the aspects of the relations of men in exchanging services, and it provides a language which is already sufficiently current to be used here without full explanation of the terms. Therefore, without more ado, the philosophical aspects of the economic system may be considered in the terms of economic science, but outside the frontiers proper to that partial analysis.

The facts are the actual relations of men in a society in which each man does not grow his own food or make his own clothes. The attempt to explain these facts by reference to a supposed situation in which they did not exist—the Robinson Crusoe of economic mythology—is irrelevant, if not misleading; for to assume that men are essentially separate invalidates the explanation of the present relationship, even if the assumption, as in current psychology and in the traditional economic science, is unconscious. There is no doubt at all that every man, woman, and child is now dependent for food, clothing, and other goods upon the activities of other men. In China and Kurdistan and Central Africa that is the situation, as it is in Western Civilization. But the particular form of the relations in exchange of goods and services which now dominates Western Civilization is called "industrial," which seems to mean that the relations are fundamentally affected by mechanization of human activities and large-scale social organization. What is economic, therefore, will be treated here as if it were pre-eminently industrial; for this is written to be read by Londoners and New Yorkers, not by Kurds.

If we ask, conversationally and without the strange appetite of

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philosophers for irrelevant information, what a man is, we generally receive an answer in terms of an occupation in economic activities. Such and such a man is a banker or a dustman; such and such a woman is a typist or a charwoman. He or she may also be said to be a mind and a body, but such a description is reasonably regarded as less informative. There are some philosophers who say that everything is mind; and other compliments are paid to triangles and tripe. But compliments to the world as it is generally end in words without meaning. At any rate, it is philosophically important that one man is a banker and another a dustman. Only the Absolute knows which the Absolute is or what other occupation it follows. Mind has a habit of banking or collecting refuse and doing many other things much more vigorous than thinking and certainly more important than existing; and not one of these things does any mind do without a body, or separately from other minds and bodies. It does not explain these facts to omit to mention them in the explanation. The names for occupations, then, which are given as explanations of what men and women are, indicate the structure of social life in its economic aspects.

ECONOMIC ACTIVITIES ARE SOCIAL.—Social life in its economic aspects can be analysed by reference to the different kinds of relation between men in the exchange of their services. Exchange of services is the fundamental fact; but many services clearly are not exchanged, and some are regarded as not exchangeable. A mother feeds her infant without charge—at least usually, although parents used to claim credit for the results of what was called the accident of birth. Probably some husbands and wives are not parties to a financial contract, although many more are actually so than are aware of it. However, omitting some services, clearly bankers and dustmen, professors and postmen, grocers and professional singers, exchange their services. There are, therefore, in most of the social situations for all men some exchanged services of other men. A boot contains the blood and the bone of those who made it. Bread is not only a natural product but also some human labour. The movement of the train one sits in is quite different from the movements of the earth, because in it is the vigour of the builders and drivers of the engine, and supporting it are the intricate calculations of financiers and the watchfulness of signalmen. The fare one has paid is one's service in exchange—banking or collecting refuse—rendered in a common unit of exchange, that is to say, money. A keen philosophical eye, therefore, ought to be able to see in boots and bread the human relations which make them available. But whereas in earlier times the man who wore the boots saw the man who made them, now we are distant and divided; for the person served is usually forgotten by those whose activities are for his service; and, worse still, those

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who derive benefit from the service generally ignore those who serve. True, we are served now through more tools or machinery, but within all machinery is the blood and bone of those who made it and those who use it. The range of our social insight has not kept pace with the increase in the scale of operations on which civilized life depends. Again, we do not see that great sections of modern service are essentially co-operative; that is to say, that neither railways nor ships are made by individuals working separately, but by closely knit groups interlocking their activities. A modern boot is much more of a social product than a mediæval boot, and it is quite fantastic to suppose that the part made by each worker, organizer, or owner of the machinery, can be distinguished exactly from the parts made by others. Service is not individually rendered, and therefore payment for service cannot justly be made to individuals taken separately. There is no means of desocializing the existing system of production.

The prevalent industrial system in Western Civilization is new, but it is already regarded by most Europeans and Americans as "the nature of things." In its present form it has lasted for about fifty years in the record of civilized life, which goes back at least eight thousand years, and will probably be continued for more than another eight thousand. The industrial system is, therefore, much more experimental than our political or educational and religious systems. However, in its present stage it consists of three chief relationships between men: (1) ownership of the instruments of production, (2) use of these instruments, and (3) organization of this use.

CAPITAL-OWNERS.—Ownership, which is a political not an economic situation, is the right to control the use of instruments. It is, of course, derived from such primitive ownership as the control of one's own food and clothes; but for our present purpose what is important is that machinery or plant and land is "owned." The scale of the operations in contemporary production, however, has made it unusual for one man to own all of a plant, and therefore joint stock companies have become common. The persons who thus own some of the chief instruments of production are usually called shareholders, of whom there are many classes distinguished according to the extent of the power involved in owning. But in general they act together in groups for dividing the purchasing power obtained by the use of "plant" in rendering services. Thus in modern social life a shareholder's mind is formed; and all who have that type of mind, or whose behaviour is in accordance with such a mental "set," are in a peculiar social relationship with those (*a*) who use the instruments of production directly, and with those (*b*) who organize such use. The shareholders and their representatives generally extend

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ownership to include the right to what *they* consider their share of the product. This understanding of ownership is maintained by the State, although certain obligations are enforced, since, for example, an owner of houses is not allowed to earn an income by their use as brothels nor an owner of cattle to sell diseased meat. There are limits to "what a man may do with his own." It is not even allowed in Western countries that an owner of machinery shall have it used by children of five, as the mill-owners of Lancashire did a century ago. The State compels those who use the economic system to consider other ends than their own advantage.

The relation, however, of shareholders to those who use their machinery or other "plant" is unconscious. Those who divide the proceeds of rubber plantations, for example, never hear of those who work on them; and at closer range, the owners of tobacco or shipping shares have no personal knowledge of the conditions under which tobacco-trade workers or seamen perform their services to the community. The human groups whose actions maintain the economic system are insulated one from another, and the owners of the tools seem to regard the tools chiefly as means for obtaining purchasing power for themselves and not as means by which other men are served. Capital-owners have very little conscious responsibility either to those who use their machinery or to those who need its products.

THE "MANUAL" WORKERS.—Secondly, the use of instruments in the industrial system involves continuous activity of many millions of men and women, working in close contact in mines and factories. There are about sixteen million in Great Britain so occupied, as compared with twenty million who are citizens, having votes; and most of the four million voters outside mines and factories are in shops or transport services working, as we say, with their hands. But of the persons available for such services over a million in Great Britain and about ten million in Western Civilization as a whole are continuously unemployed—that is to say, not integrated into the system of exchanged services and, for this purpose, wasted. However, the rest are organized in distinguishable occupations.

Such occupations greatly affect the mental outlook or "set," since the carpenter, for example, tends to develop a technical language of his own and a special view of wood and its uses. An occupation moulds the character and tendency of a person's life; but this moulding is still more drastic when the occupation is followed by many in close contact. Thus a coal-miner works always among coal-miners, and a common mental "set" is thus formed, no less powerful than what is sometimes unwisely called the "group mind." There is obviously a "mind group" of coal-miners. The members of such a group are related more intimately than any one of the group

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is related to others outside the group. An occupational unit in social life is at least as important as the unit formed by neighbourhood. But clearly the result in a certain mental "set" or attitude towards life is not designed. It is the accidental result of large-scale operations in the modern system of economic services. Similarly large-scale machinery has brought together girls in carpet factories, men in engineering shops and shipyards, and the rest. Their services are rendered in certain "cadres" or regiments or occupational groups, in which most of them spend most of their waking lives. The extent and importance of their services are immense. Civilized life would be quite impossible without such services, so organized and so endured. They are the substitutes in the modern world for the services in other civilizations of slaves or serfs; and the men and women who render such services are less rapidly exhausted than in earlier civilizations. But for the philosophy of social life two aspects of their services are important: first, the old tradition continues to make it usual to speak of them as "manual" workers, as if the brute force they contributed were the most important aspect not only of their services but of their personalities; and, secondly, each receives in exchange for his or her service what is called a wage. The wages-system has great social effects. It involves generally a small payment made at short intervals and, in most industries, without any promise of security from month to month. Short views and uncertainty are, therefore, common among most industrial populations—which has important effects upon voting in politics and upon education. These characteristics of the so-called "manual" workers make it possible for the few who have security of tenure and long views to neglect not only the mental "set" but even the existence of their servants in industry. The fantastically absurd social philosophy of Aristotle still survives. It is assumed that those whose opinions are in fact discounted have no opinions worth counting, as Aristotle assumed that those who happened to be slaves were slavish. Indeed, the majority of treatises on "the general will" and "social purpose" still imply that civilized life is mainly what occurs in drawing-rooms, in abstraction from kitchens and streets—not to speak of mines. But what occurs in mines is—thinking and feeling, as well as the movement of coal by muscle. Such thinking and feeling is not integrated into the dominant social consciousness of to-day, as the thinking and feeling of slaves or serfs was not integrated into the anæmic "good life" of Aristotle or the childish chivalry of mediæval courts.

Behind the shelters which protect superior persons from unpleasant sights are poverty and waste of human energy, the great evils of economic life, as war is the great evil of political life. And, like war, poverty is commonly regarded as regrettable but inevitable. As we prepare for war, so we "help" the poor—which helping, like the

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preparation for war, greatly increases the evil and prevents any drastic treatment of its causes. We are told on authority that we must give something to those who have too little, without asking why they have too little. Indeed, it would be regarded as improper if, even in this section of the philosophy of social life, anything unparliamentary were said of the nature of complacency. Most analyses of social life are made by those who do not suffer from contemporary habits. It would, indeed, be a mistake to suppose that the majority of our servants in industry are the poor or the wasted: for poverty is the state of a person who has not even enough for normal human needs. But great numbers of workers are in this state, and many more are in constant danger of it.

The structure of social life, however, is already affected by consciously planned associations based upon the occupational mental "sets" already mentioned. These take two forms: Trade Unions and Consumers' Co-operative Societies. In Western Civilization generally, but chiefly in Great Britain, Germany, France, and the United States, organized groups of "manual workers" maintain their common outlooks and interests by trade unions. A trade union is a sphere of intense loyalty and original creative association between its members. The first attempt of the discounted to associate for their own ends were so vigorously opposed by all social forces then available that even now members of a trade union feel themselves to be living in a hostile world. But great associations such as the National Union of Railwaymen, with about 400,000 members, are much more important for civilized life than many small States. All powerful trade unions have an elaborate organization: a central executive, a local administration, and an easily roused membership. The opinions and mental "sets" developed in such an association are not confined to rates of wages, and are philosophically as important as the mental "set" of a group of "business men" or of university professors. Trade Unionism colours the situation within which the State operates in the chief Western countries. Social life in industrial civilization is unintelligible without continual reference to it; and it is, as an institution, very young. Probably the general character of trade unionism is already changing with the increase of education, the extension of the political franchise, and the determination of men conscious of the need for their services to be no longer discounted. The so-called manual worker thinks and feels, and is not inclined to accept other people's views of his position in the social structure. As the common soldier discovered in war that his work was essential, so the electrical or railway worker knows his power and accepts his responsibilities, but not at the direction or under the exhortation of those who regard him as an instrument of their will. Many strikes are not mere reactions due to grievances,

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but threats to tyranny; and they are directed not only against the owners of the instruments used in public service, but also against the complacent ignorance of the general public which uses services without regard to the conditions under which they are served.

Trade unionism, however, is not simply a defensive organization: it is a system of free association among equals, which may become the basis of progressive organization in the rendering of services. It should become, therefore, not weaker but stronger in proportion as the more obvious grievances of our servants in industry are redressed. Already it differs in character in different sections of industry. In some, as in railway services, it is constructive in policy; in others, as in the chaotic and slavish occupations of mining or textile production in the United States, it is bellicose. But in some parts of the United States trade unionism is opposed by armed forces and spies maintained by the capital-owners. In Germany, at the other extreme of civilized life, trade unions are represented as the central advisory body of the Reich for industrial policy; and in Great Britain powerful trade unions treat with bodies of organizers of industrial services.

BUSINESS MAN.—The third great group of activities in economic relationships is the organizing group. In simpler societies the organizing of the use of instruments was done by the owners of the instruments, and in still simpler societies the owners were the users of the instruments. But now financiers, managing directors, and commercial agents for raw material or finished products make a class by themselves. They are not necessarily, and in most cases are not at all, owners in the industry in which they are employed. Their services are exchanged for salaries, which they usually derive from the resources of the capital-owners. Thus the human relations in the economic systems of to-day are dominated by the conception of ownership, through organizers conceived as agents for owners and not as servants of the community served by industry. But, of course, dominant conceptions do not necessarily arise from the most important factors of a situation. The economic system might be viewed as primarily an interchange of services. It might be viewed as a co-operative enterprise for maintaining and developing civilized life. It is actually viewed by most men as a battle-ground for a general scramble to get as much and give as little as possible. The organizers of industrial production have in their minds certain assumptions, more or less clearly conceived, which give direction to their devices; and these assumptions themselves rest on the generally accepted views of social forces which maintain the system. Business men, as financiers and industrial organizers are called, are generally quite unconscious of the assumptions on which their behaviour rests. Some of them appear to perceive at certain moments that they are in fact servants of the community served by industry and not of the owners of the

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instruments of production. But the majority act as if their occupation were mainly a source of income for themselves. This is commonly assumed also by capital-owners and by manual workers: for all industry is regarded as a scramble by individuals making little piles for themselves. But it is most important when this assumption dominates the minds of those who are at the heart of all industrial policy, for then the system of organization itself is controlled with a view to improving the chances of a scramble, especially for the advantage of those who hold the key positions—the organisers of industry. In the political sphere this would mean that the executive and its chief administrators were "not in politics for their health," but were confessedly "on the make"; but even in the Middle Ages political and judicial administration was believed to be a form of public service. This is not yet commonly accepted in practice in economic life. The organizers of industrial services are not regarded as primarily servants of the community, and the occasional assertion that they are, serves to cover private raids upon the store available, excused by the distribution of what the successful raider can spare.

THE CONSUMERS.—The great majority of persons served are themselves serving; but as persons served they are called consumers, users, or enjoyers. Their activities, such as they are, are called by the economists "effective demand." Needs are embodied roughly in wants. But wants are operative in the economic system only when expressed in terms of purchasing power, and therefore the want of boots in a poor child is irrelevant for the present economic system. Nevertheless, there is enough monetarily expressed want to keep the system of production going. There are boots and houses used; there is food consumed; there are cinemas enjoyed. In order to study this part of the economic system, one should watch people eating or travelling in trams or looking on in cinemas. All this is called "consumption," and in many aspects it does indeed appear to be a disease. It is at any rate very unskilful. What a man eats, wears, or enjoys is traditional, and is largely dominated by what are called "herd" instincts. This is an advantage for large-scale production, for production would be much more difficult to organize if the organizer could not foresee whether men would wear trousers or togas next week. But it has the disadvantage that every man is disguised as the average man, and nobody seems to be anybody. Perhaps beneath the calm of innumerable bowler hats many different poetic souls are blossoming; but the evidence seems to point to the assimilation of souls through similar clothes. We have carried the village mind of neighbours frightened of one another's opinions into the vast world market. We live on a large scale with small ideas to guide us. We can move faster, but have not discovered any better reasons for moving at all. Most goods and services are used as savages,

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if not monkeys, would use them, for individuals nibbling in corners. But a large and increasing amount of goods and services are communal. Roads and drains, parks and libraries, and many other services are used in common by great numbers of people. The State has been used to provide economic services where traditional appetites could not be induced to provide them or where private groups were likely to victimize consumers. Similarly, the great Co-operative Societies throughout Western Civilization have organized the supply of needs in the hands of consumers. There are therefore the beginnings of a new development in consuming.

All this is for the sake of a full and enjoyable vitality which is called "welfare." The relation of wealth to welfare is not carefully thought out, and the so-called standard of living differs in different social classes and in different nations. But the standard of life, or the moral ideal for a civilized human being, in civilized society affects the production and use of exchangeable goods and services; and therefore, if the cultural organizations, which are to be discussed later, develop a new conception of civilized life, the economic system would have to be changed. On the other hand, a society dominated by efforts to acquire wealth may not have intelligence to spare for the consideration of the purpose, the welfare, which the economic system should satisfy. And in a civilization in which producing is highly organized and consuming traditional or unskilful, ease and serenity, vigour and perceptiveness are likely to be deficient. But the most striking characteristic in all parts of the economic system is the general feeling that it must be what it is.

GOVERNMENT AND INDUSTRY.—Against the fatalism of habit, reformers have struggled for a century, and now the State assists in the organizing of production and consumption through company and factory laws, laws against adulteration, and for the support of the unemployed and those who are the "casualties" of the industrial services. In theory, the economic system might have been organized in view of fundamental human needs; but in fact, at the time the new system grew up, the scientific mythology of natural law dominated even human relations. Nevertheless, regulations were made operative, and the State has civilized some parts of the industrial system; although the relation of Government to the organization of production and consumption is still empirical and tentative. What used to be called State interference has, however, been shown by experience to be of great advantage to the economic system even for the limited purpose of producing more wealth and distributing it more equitably.

The general character of economic relations should now be apparent. As compared with the political, already discussed, or the cultural, to be discussed later, economic relations are primitive, and it is in this very field that power has been most rapidly increased

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in recent times. The elaborate mechanisms, trains and drains, aeroplanes and wireless, produced and used within the economic system, have misled the simple-minded into supposing that economic life has advanced beyond the Middle Ages. Indeed, the Middle Ages were bad enough; and where mediævalism survives in China and India, the economic relations of men—the scrambles for private wealth out of a small store—are very evil. It is fantastic to idealize the fourteenth century. But the habits and mental outlooks dominating production and consumption in modern industrial civilization are those of the Middle Ages. The State, as we have seen, has recently become a service rather than a power, and there are the beginnings of a State system or system of government uniting the whole world. But economic organization, both in its consuming and in its producing, is still dominated by primitive appetites and the very simplest ideas; and, worst of all, the system which is hardly fifty years old is regarded as too sacred to change. The conception of an economic policy, that is to say, a deliberate control of production and consumption for the sake of a clearly conceived civilized life, is not yet common even among thinkers.

Economic "Laws."—The relations formed by traditional habits are affected by "natural" results which are not designed and are hardly at all controllable by human power. Thus, given the habit of buying in the cheapest market and selling in the dearest, certain "natural facts" occur, such as the so-called law of supply and demand, which can be studied without reference to human choice. The use of the word "law" to indicate general facts for scientific observation is misleading even in the physical sciences, as, for example, when the general fact in regard to the relation of masses is called the "law" of gravitation; for "law" implies either will or agreement and obligation of some kind. But it is quite absurd philosophically to imply that the Earth obeys a command or is obliged to go round the sun. The word "law" in the phrase "economic law" is still more misleading, because the general fact referred to is a fact about human acts, within which field real law is found. There is, of course, no command and no obligation about the relation of supply and demand or about diminishing returns; they are general facts in the same sense as gravitation is a general fact, in contrast with events such as a position of the Earth or a given situation in the exchange of services. But because of the unfortunate use of the phrase "economic law," economists have been regarded as law-givers; and some of them have praised economic general facts, which is as absurd as if a physical scientist praised the Earth for going round. Ignorance of general facts is regrettable; a knowledge of general facts in regard to exchange is useful in devising a policy; but such general facts are only the necessary conditions, within

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which there is a large field for alternative policies in economic organization. And because economists are seldom psychologists, they do not know anything of the undeveloped abilities of common men. They study actual habits and are not aware of abilities for which the established system provides little or no scope. This is not a disadvantage to them as economists, if economics is a science of facts. But it makes them quite incompetent as judges of "values"; and values must be studied for the devising of economic policies and skill in the economic art.

The possible policies or suggested methods for reorganizing economic systems must have regard not so much to necessary conditions, studied in pure economics, as to psychological abilities which, in relation to economic activities, have hardly yet been studied. Existing practices must be studied psychologically. The peculiar habits of "business" men, their standards of morality, their interest in the work they do, the fantastic reasons they give for doing what they do—all this must be examined. Again, the different groups of manual or clerical workers have most interesting "behaviour systems," mental "sets" and outlooks. Finally, when men eat badly, or clothe themselves hideously, or run in or out of their absurd houses, we may study the psychology of consuming or using goods and services. Almost all such acts are traditional; they are ingrained; they are firmly set below the level of conscious calculation. But if any change is proposed, for example, in the wearing of clothes or in the laying of bricks, the traditional "behaviour systems" may prove to be not flexible enough to produce or use goods under a new system. The strength of the undeveloped abilities in any man or group of men is in question, when it is doubted whether a new economic policy could be adopted in any one industry or country. The fundamental issue, however, is the desirability of change; and this can only be decided after weighing the benefits and losses to civilized life of the existing system. Clearly greater benefits and less cost would be desirable—more wealth, better used, with fewer victims in the service of men. The ideal of an economic system, however, is dependent upon the general ideal of civilized life, for the discovery and expression of which we look to "the spiritual power"—the organized religious and educational institutions.

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THE ONE AND THE MANY

C. E. M. JOAD, B.A.

I

THE belief that the universe is fundamentally a unity, that there is, in other words, some fundamental principle from which all the variety of nature and experience can be derived, has been entertained in some form or another by the majority of philosophers. It is also the presupposition of most religions. If we hold that the universe is really one, or really a unity, it will follow that there is a distinction between reality and appearance. For the universe certainly appears as a plurality; it certainly seems, that is to say, that there are many things in the universe, chairs and tables and people and numbers and thoughts about them, which are really different one from another. If, then, the universe is really one, this appearance of plurality will be in some sense an illusory appearance, and it will be necessary to explain how this illusory appearance arises.

I propose to consider three different forms of the view that the universe is really a unity, the forms, namely, in which it has been maintained: (i) by the Greek philosophers Parmenides and Zeno, (ii) by Hegel, and (iii) by Bergson, respectively. I shall try to give, first, the reasons which have led these different philosophers to regard the appearance of many things as illusory, and, secondly, the explanations which have been put forward in cases (ii) and (iii) to account for the way in which the appearance arises. I shall in a concluding section indicate why, in my view, the reasons for regarding reality as a unity and the appearance of many things as illusory are not such as we can accept.

II

(i) The problem of the One and the Many, as it was called, forms one of the chief preoccupations of Greek philosophers. Socrates is bald; Socrates is also short; Socrates, therefore, is two different things. Yet Socrates is one. How, then, can what is one be at the same time many? Faced with this problem, Parmenides and Zeno of Elea, a follower of Parmenides, maintained that the apparent 'manyness' of Socrates was an illusion.

Parmenides' arguments, indeed, are chiefly concerned to show that *change* is illusory. If we consider everything that is, it is clear

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that it cannot become more than it is, except by the addition of something else; but, if we start with literally everything, there is nothing left that can be added to it. Similarly, everything that is can only become less than itself by reason of some part of it becoming separated from it and departing somewhere else; but once again, if you start with everything that is, there is no place whither the separated part can proceed that has not already been comprehended in the whole reality with which you started. Similar arguments can be applied to demonstrate the impossibility of the growth or diminution of any particular element in the universe—that is to say, of apparent changes in the quality as opposed to the quantity of everything that is. It follows that the whole cannot change, and that any apparent change in the parts is, therefore, an illusion. But if there is no change, it will follow that the many things which appear to change must be in some sense unreal, or the change in them unreal.

Zeno applied the same line of argument to particular examples of apparent change—for instance the movement of an apparently moving body. Taking as an example the flight of an arrow, he pointed out that at every point in its flight it either is where it is or it is where it is not. If it is where it is, it cannot be moving, and it cannot be where it is not. Therefore at that particular point of the flight it is not moving. A similar consideration applies to any other point of the flight. Therefore the arrow does not move at all, and movement is an illusion.

What this argument really proves is that if the course of an arrow be conceived as an infinite number of separate points, then the arrow cannot in a finite time pass through them all. For before any body in motion can traverse the distance between any two of the points, it must first traverse half the distance; before it can traverse half the distance, it must first traverse a quarter of the distance, and so on *ad infinitum*. A similar argument is responsible for the famous paradox of Achilles and the tortoise. However fast Achilles moves, he can never catch the tortoise, because by the time he reaches the place where the tortoise was when Achilles started, the tortoise will have moved elsewhere, and so on indefinitely.

The conclusions derived from these and similar paradoxes are that ordinary beliefs in plurality and motion, in the existence, that is to say, of a number of separate points between any two points, and in the possibility of movement from one point to another, involve fatal inconsistencies, that space is, therefore, indivisible, and that Parmenides is right in maintaining that change and "manyness" are illusions.

Whether the paradoxes of Zeno do in fact justify these conclusions is doubtful. The questions raised cannot be pursued here, but it may be remarked parenthetically that the analysis by modern mathe-

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maticians of the notions of infinity and continuity is claimed[1] to demonstrate conclusively that they do not. Bergson, moreover, has defined the conception of change in such a way as to suggest that a fallacy is inherent in the way in which the paradoxes are propounded. Movement and change are for Bergson processes such that we are falsifying them in regarding movement, even for the purposes of argument, as divisible into a number of separate points, or change into a number of separate states. Bergson, as we shall see, does not draw from these paradoxes Zeno's conclusion that change is unreal, but on the contrary affirms that change alone is real.

Not less important is Zeno's use of the problem of predication to demonstrate the impossibility of 'manyness.' We learn from Plato's dialogue *Parmenides* that the first proposition maintained by Zeno was as follows: "If existences are many, they must be both like and unlike, unlike inasmuch as they are not one and the same, and like inasmuch as they agree in not being one and the same. But this is impossible, for unlike things cannot be like, nor like things unlike. Therefore existences are not many." In other words, since to attribute to the same thing both likeness and unlikeness violates the law of contradiction, the notion that there are many different things which can be conceived to be either like or unlike each other is false.

Zeno's proposition raises the same issue as the problem about Socrates' baldness and shortness mentioned above, the issue namely of the possibility of predicating different attributes of the same thing. If, when we say Socrates is bald and Socrates is short, or A is like B and is also unlike B, the word 'is' is to be interpreted as affirming absolute identity—and Zeno apparently did interpret it in this way—then the supposition that there are many things obviously leads us into hopeless contradiction. But in saying that Socrates is bald, we are not necessarily affirming that Socrates is identical with baldness; we mean merely to assert that baldness is one among a number of properties that Socrates exhibits. A theory of predication is, therefore, required which will enable us to attribute a number of different properties to a thing without being understood to affirm its identity with any of them.

Such a theory is afforded by Plato's famous Theory of Ideas. I shall endeavour in a later article on "Universals and Particulars" to give a general account of this theory in its wider aspects. In this article I shall confine myself to indicating its bearing upon the problem of the One and the Many with which we are now concerned.

Plato holds, for reasons which are too lengthy to be given here, that the world of objects we know by means of our senses is not entirely real. Zeno's contention that the hypothesis of many different objects lead us into contradiction, though it may have influenced,

[1] See *Our Knowledge of the External World*, by Bertrand Russell. Lecture VI.

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did not necessitate this view, since, as we have seen, the validity of Zeno's conclusion depends upon the assumption that the word 'is' means identity. It is not so much the fact that an object possesses many different properties that led Plato to deny it full reality, as that it cannot more truly be said to possess any one of them than not to possess it. A rabbit, for example, is smaller than an elephant and larger than a mouse. It is, therefore, both small and large, or rather, since it can no more truly be said to be one than the other, it is not really either. Its qualities, that is to say, are not really possessed by it in its own right; they only belong to it relatively to other things, since, if rabbits alone existed, there would be no reason for regarding them as either small or large.

If the attributes of a sensible object are not stable and permanent, belonging to it in its own right, but fluctuating and relative, we cannot have certain knowledge of them. Yet the existence of logic and mathematics shows that we do possess certain knowledge. Of what then is this knowledge? Plato's answer is that knowledge is of Forms of Ideas which, eternally the same and completely real, are known not by the senses, but by the mind. These entities are denoted by the class names which we give to the common qualities of different things, for example, tallness, smallness, whiteness, humanity, and Plato conceived of them as existing in complete independence of the world of sensible objects. The Forms, then, and not the many things of which our senses make us aware, constitute the real world.

(ii) What, then, is the relation of the world of sensible objects to the world of Forms, of the rabbit which is small to smallness? How, in other words, does the world of Plurality arise? The answer to this question is controversial. As, however, I do not wish to commit myself to a discussion of alternative theories in this article, I will use an admittedly ambiguous word such as 'manifestation' to denote the relation. The Form of smallness is manifested, we shall say, in the rabbit; so too is the Form of largeness; the Form of whiteness is manifested in milk, of blackness in coal, and so on.

If the Forms are absolutely real and constitute what Plato calls the world of 'Being,' how do they come to be manifested in sensible objects which are something less than real? By being compounded or entering into association with Not-Being. Besides what completely *is*, the universe contains an element which completely is not. It is this element of Not-Being which is the source of chaos, featurelessness, and "manyness." Conceived as a sort of substratum of sheer formlessness, it constitutes the medium in which the Forms manifest themselves. The result of the manifestation of a group of Forms in Not-Being is a sensible object which, being thus com-

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pounded of two factors, complete reality and complete non-reality, occupies a position midway between the two, and acquires a status of semi-reality. Its features or qualities it owes to the fact of the manifestation in Not-Being of the Forms which stand for the qualities in question. Strip away from a thing all its qualities, and what is left? Nothing certainly about which we can say anything, if only because in saying something about it we should be predicating qualities of it. Yet clearly an object cannot be defined as a collection of manifested Forms, if only because the Forms are fixed and changeless and the qualities of objects changing and relative. And the qualities of sensible objects are changing and relative because of the element of Not-Being in which the qualities are manifested. It is Not-Being which, acting as an obscuring and distorting medium, precludes the perfect manifestation of the Forms.

Returning to our original problem in the light of this brief account of Plato's theory, we shall say that the possibility of predicating many different attributes of the same thing is conditioned by the manifestation in it of a number of different Forms. A man is both short and bald, or short from some points of view and tall from others, because there are immanent in him the Forms of shortness, baldness, and tallness. Apparently a diversity or plurality of many attributes, a man is in fact the meeting-place of a number of unities. Hence the apparent plurality of the world of sense is only semi-real, the real world to which it owes such reality as it possesses being revealed as a number of self-subsistent unities. In a famous passage in the *Republic* Plato derives the multiplicity of different Forms from one more fundamental than any, the Form of the Good, from which they all spring and to which they all owe their being. Thus a single self-subsistent unity, the Form of the Good, is exhibited as the ultimate nature of reality.

III

(i) Hegel's philosophy is very difficult, and it is not possible here to give more than the barest outline of the reasons which led him to affirm the ultimate oneness of the universe.

If we consider the nature of any object, we find that, in order that it may be completely understood, it involves a necessary reference to other objects; taken by itself, it is not self-sufficient and not, therefore, intelligible. A hen's egg, for example, is less round than a ball, more brittle than leather, larger than a sparrow's egg, smaller than an ostrich's, and so forth. If these facts were not facts about the hen's egg, it would be a different object from the object which it, in fact, is; hence, we may say that these facts contribute to its being what it is. Now, each fact implies a relationship on the part of the egg to some other object; hence, its relationships to other objects are

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constitutive of the nature or being of the egg, since, as we have seen, without them it would be a different egg. But the egg is related —*e.g.* by relations of likeness and unlikeness—to everything in the universe; therefore everything that is must be taken into account and understood before we can completely know the egg, simply because everything that is is implied in the egg being what it is. Hence objects are, as it were, welded together as parts of wholes, which contain both the objects in question and other objects, by relations which constitute the parts, and are constituted in their turn by them. The differences between things are, therefore, unreal. The conclusion reached by this line of argument is known as the principle of internal relations.

A similar conclusion applies to the processes of thought. Any so-called truth we like to assert involves the existence of the contrary untruth; this is the case not only with regard to particular propositions, as, for example, that this patch of snow is white, but also with regard to theories which purport to be of universal application. The belief in free will, for example, is opposed by the contrary belief in determinism; each belief is irrefutable in relation to the facts with which it deals, yet, from the very circumstance of there being a contrary belief, neither taken by itself can be quite true. There must, then, be some wider truth which includes both the partial truths asserted by the theories in question, by comprehending both theories within its own statement, and the mind, unable to rest in the incomplete truth, which can be contradicted, will be driven forwards to embrace the wider truth. This wider truth, in its turn, will be confronted with its contrary, together with which it will be subsumed and embraced within the scope of a still wider truth. This process of comprehending partial and opposing truths under wider formulations, which transcend them both, continues indefinitely until we reach the final truth under which all partial truths are subsumed, and in which all contraries are reconciled. This final truth will be the whole truth about everything; to it, therefore, there will be no contrary. It is, moreover, related to the whole about which it is the truth, since it applies to it and is true of it; it must, therefore, according to the preceding argument about relations, be continuous with it, forming with it a single, indivisible unity.

Now, a truth is mental; it is a characteristic of thought and presupposes a mind; therefore the whole with which the final truth is one is also mental. We thus arrive at the Absolute, the most striking conception of Hegel's philosophy, which is the name he gives to reality; this reality is a single unified whole, comprehending within itself all distinctions, including the distinction between mind and its objects, and embracing all differences.

This brief sketch of Hegel's general position may be illustrated by

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a reference to two particular doctrines which are implied by it, and upon which it itself in turn depends.

(*a*) *Theory of Judgment.*—The philosophy of F. H. Bradley, though differing in important particulars from that of Hegel, concurs in maintaining the fundamental unity of the universe. This unity Bradley envisages not as a structure of pure thought, but as being coloured by elements which are more akin to what we call feeling. His theory of judgment, however, constitutes an important reinforcement of the sort of view which Hegel maintained.

Traditional logic regards judgment as an act or process in which a predicate is ascribed to a subject. By a logical development of this view Bradley showed that the subject to which the predicate is ascribed must ultimately always be the same, namely, the whole of reality, that is to say the Absolute; since, if there were two subjects, the judgment that there are, in fact, two subjects would not ascribe a predicate to either. Hence in making any judgment we are ascribing a predicate to reality as a whole. In other words, whenever we say anything about anything we are not, in fact, specifying a property of a particular isolated thing, which is what we purport to be describing; we are making a statement about the imperfectly revealed nature of what, in all the statements we make, is always the same thing, namely, reality.

This reality, like Hegel's, is a single Absolute, which is timelessly engaged on something more closely analogous to feeling than to thinking or willing.

(*b*) *Theory of Perception.*—When I perceive or know anything, we should normally say that there are two separate entities involved, namely, my perceiving or knowing mind and the object perceived or known, that these entities were completely separate and independent of each other, but that they were temporarily brought together by the relation of knowing or perceiving. Knowledge, in fact, is a process by which two separate entities are related in a particular way.

This common-sense theory of perception contradicts the principle of internal relations by positing that the two entities concerned are initially separate, and for the reasons given above is, therefore, unacceptable to Hegelians. Hence, instead of regarding knowledge as an activity whereby two separate things are linked together by a relation, Hegel's philosophy exhibits it as a process by which two separate aspects of one unity are discriminated within it. Initially there is a mental whole which is experienced. In this mental whole an act of thought discriminates two separate aspects, one of which is denominated knowing mind, the other object known. Of these the second is projected, as it were, outside the mental whole in which it was detected, and given a status in the so-called external world as an apparently independent object.

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So to regard it is, however, in the last resort a delusion. Our own experience, that of which we are most immediately aware and indubitably certain, is shown on analysis to be not a process in which two separate things, mind and object, are mysteriously brought together, but a unified whole in which two aspects may be discriminated. The fact that no thought, when separated from the object of which it is a thought, is entirely real is symptomatic, the nature of experience, which reveals itself as a whole which is logically prior to its parts, being taken as a clue to the nature of the universe. For what is true of separate acts of human thinking is true also of other apparently separate entities; these too are parts or aspects of larger wholes, and so we are led by the process of dialectic to the whole within which all other wholes are comprehended and embraced, which is the Absolute.

(ii) The question how the appearance of many different things arises is one which Hegel's philosophy finds difficulty in answering.

The considerations which are involved in the answer to this question belong to the more abstruse and controversial parts of Hegel's philosophy, and I can only indicate baldly here what the answer is. The unity of the universe is for Hegel not something dead and inert; on the contrary, it is ever new in the continual expression of itself in finite terms. But, while the whole is immanent in each finite, individual expression of itself, nevertheless what is finite and individual cannot, as we have seen, stand alone. What is finite and individual inevitably gives rise to contradictions which can only be resolved on the assumption that it is an aspect of something larger than itself within which it is embraced. In other words, the contradictions which beset it when taken as an isolated individual disappear when it is seen as an interrelated part of a whole. Hence, the continual tendency of the whole to express itself in individual manifestations, and the contradictions to which these, when taken as individual, give rise, are the source of the movement of thought which seeks by transcending the contradictions to return to the whole in which they are overcome.

These considerations may be applied to the existence of individual minds, and the thinking activity of individual minds. Since an analysis of our immediate experience leads us into contradictions of precisely the same type as those which are involved by a consideration of any individual thing when taken in isolation, we are driven to the conclusion that our own experience, when taken as individual, as divorced, that is to say, from the rest of experience, is not entirely real, but is a part of a larger experience which, though immanent in it, transcends it. Individual minds, in other words, are partially revealed aspects of larger mental wholes. Since they are partial and finite, the view which they take of reality is infected with the partiality of the minds in which it arises; in other words, it

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is not quite true, just because the individual, thinking experience in which it occurs is not quite real. Now the view which the finite individual mind takes of reality presents it as a collection of separate, external objects; yet this view must, if the foregoing argument is correct, be a delusive because partial presentation of the world. In a larger view, such as, for example, that which philosophic reflection enables us to take, the elements of multiplicity and separateness are, as we have seen in the above sketch, eliminated. But it is only to the Absolute's view of itself that reality is revealed as a perfect unified whole, in which all differences are overcome and all contradictions reconciled.

IV

(i) Bergson also regards reality as fundamentally a single indivisible unity. This unity is, however, conceived by him not as a static Absolute, but as a dynamic ever changing stream, which he speaks of in one connection as duration or time, and in another as life.

This fundamental nature of reality is made known to us not by process of reasoning, the intellect being envisaged as a faculty evolved by life for practical purposes and incapable therefore of arriving at metaphysical truth, but by another faculty which Bergson calls intuition, which is more akin to though not identical with what we know as instinct. The intellect can, however, present us with a number of arguments in favour of the conclusion which we intuitively divine. Most of these arguments are of a negative character, and are concerned to exhibit the contradictions into which we are led by the notion of the universe as consisting of many changing things. A changing thing is commonly conceived as an entity of which one part or element is changing while another remains unchanged. The first is envisaged as consisting of a series of changes, the second as that to which the changes happen or in which they occur while itself remaining unchanged. Bergson's argument is devoted to showing that the second element is a fiction, for the reason that when you eliminate all the elements in a changing thing which are changing, there is literally nothing left. There are no separate things in the universe which change; there is only change. "Take," says Bergson, "the most stable of internal states, the visual perception of a motionless object. The object may regain the same; I may look at it from the same side, at the same angle, in the same light: nevertheless, the vision I now have of it differs from that which I have just had, even if only because the one is an instant older than the other. My memory is there, which conveys something of the past into the present. My mental state, as it advances on the road of time, is continually swelling with the duration it accumulates." If this is the case with regard to our perception of external objects, it

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is even more true as a description of our internal states, our desires, our emotions, our willings, and so forth. The conclusion is, in Bergson's words, that "we change without ceasing, and the state itself is nothing but change." "There is no feeling, no idea, no volition which is not undergoing change at every moment; if a mental state ceased to vary, its duration would cease to flow."

It follows that there is no real difference between passing from one state to another and continuing in what is called the same state. We imagine such a difference because it is only when the continual change in any one state has become sufficiently marked to arrest our attention that we do, in fact, notice it, with the result that we assert that one state has given way to another. Thus, we postulate a series of successive mental states, because our attention is forced upon them in a series of successive mental acts. It is for the same reason that we tend to regard ourselves as beings in whom something endures, in spite of change. Just as we say that there are separate states which change, so we speak of a self which experiences changing psychic states, and this self, we say, endures. But we have no more experience of an unchanging 'ego' than we have of an unchanging psychic state; however far we push our analysis, we never reach such an unchanging 'ego.' There is, in fact, nothing which endures through change, because there is nothing which does not change.

Hence Bergson arrives at the truth that we ourselves are beings who endure not through change, but by change. Our life, as actually experienced, as the reality of which we are most directly assured, is change itself. "If," says Bergson, "our existence were composed of separate states with an impassive ego to unite them, for us there would be no duration. For an ego which does not change does not endure, and a psychic state which remains the same so long as it is not replaced by the following state, does not endure either."

There is thus no self which changes; there is, indeed, no *thing* which changes, for in asserting the existence of that which changes we are asserting the existence of something which, from the mere fact that it is subject to change, is not itself change; there is simply change.

The truth that we are beings whose reality consists in continuous change is for Bergson the clue to the understanding of the universe itself. For the universe is shown by him to belong to the same stream of change or "becoming," as Bergson calls it (since it never actually is any one thing, but is always on the way to becoming something else), as we do ourselves. Just as we are unable to penetrate through the continuous changes of our consciousness to something stable that underlies them, so, when we consider the nature of the world around us, do we find it impossible to discover anything which passes through changes, but is itself something other than the

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changes which occur to it. The universe, in other words, is itself a stream of perpetual change.

For Bergson, then, the fundamental reality which is a unity is to be conceived not as a thought structure but as a stream of change.

(ii) The answer to the question how the appearance of plurality arises in such a world is bound up with Bergson's conception of matter. If reality is perpetual and homogeneous change, whence comes matter? Bergson gives what are in effect two answers to this question.

First, at some point of its course the living flow which is reality is arrested; it, or part of it, falls back. There is still movement, but it is movement in the reverse direction. The movement of life in the reverse direction is what we call matter. Bergson makes use of a number of vivid metaphors to illustrate this conception. Life is like a fountain jetting incessantly into the air; matter, the spent drops that fall back: or again, life is a rocket, matter is the stick that falls to earth. Matter, in other words, is life that is turned back and become dead; it is degenerate spirit.

If matter in general is due to an interruption or turning back of the vital flow, the collection of solid static objects extended in space, which is the picture which common sense forms of the external world, is due to the operations of the intellect.

Existence in a world which appeared in its true nature as a continual flux, without features or distinctions of any kind, would be, to say the least of it, difficult. In order, therefore, to facilitate action, we have evolved a purely practical faculty, of which the function is to make cuts across the flow of reality and to present it as a series of isolated and relatively stable objects. This faculty is the intellect, and the world of material objects results from the operations performed by the intellect upon reality. Material objects, in short, are carved by the intellect out of the flux of reality. They are relative to our needs, and reflect our purposes. First, as it were, in outline in the flux of reality as the imaged ends that we desire to achieve, they are projected by the intellect into an alleged external world and there represented to us as real.

Thus the world of plurality does not exist in reality; the apparent "manyness" of things is a creation of our intellects which, inserting artificial stops and gaps in the living flow of reality, articulate it into the tables, chairs, and bodies of everyday life.

V

I have little space in which to state the objections to which the positions described above seem to me to be exposed. These objections are in my view valid against any attempt to write off the

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apparent multiplicity of the universe as illusory, by exhibiting reality as a fundamental unity. I will consider in particular their bearing upon the systems of Hegel and Bergson.

(1) Hegel asserts that the real is the Absolute, and that the many apparently separate things are partially revealed aspects of the Absolute as it appears to our partial and finite minds.

(*a*) Waiving for a moment the question of how a perfect unity can be held responsible for the appearance of difference while remaining nevertheless a unity, we may say of this appearance that it is either (i) real or (ii) illusory. (i) If the appearance of difference is real, then there are many things in the universe, and reality is not a unity. (ii) If it is illusory, then in thinking of it as real, as in ordinary life we undoubtedly do, we are falling into error. This error is a real one, since, if it were unreal, then it would not, in fact, be the case that we were wrong in thinking of reality as many, and reality would be many. Hence, if plurality is unreal, error is real. Error then belongs to the essence of reality. Either, then, reality is all error, or part of it is and part is not. The first possibility, though not logically incompatible with the view of reality as a unity, is not, so far as I am aware, entertained by any philosopher. The second requires us to suppose that reality is not wholly one, but at least two, namely, error and something else.

(*b*) But how is the appearance in any event to be explained? Reality, we are told, is perfect unity; it is also perfect truth. By what means, then, are difference and multiplicity, falsehood and error, evolved out of perfect unity and perfect truth? It may be said that the variety and multiplicity of the universe are temporarily or apparently generated out of the unity of the Absolute into which they will again be reabsorbed. But then the potentiality for such variety, or rather for the development of such variety, was contained in the Absolute from the beginning, just as the potentiality for development into a chicken is contained in an egg from the beginning. But, if this is the case, then the Absolute is not a complete unity, but a unity qualified by the potentiality for developing a multiplicity, which is only another way of saying that the multiplicity existed in the unity in an incapsulated or embryonic form all the time. But in this event the universe is just as truly many things as it is one thing.

(2) Bergson's account of the appearance of matter attributes it to an interruption or falling back of the main flow of life, while plurality is the view which the intellect takes of reality.

Leaving out of consideration the question whether these two accounts are not ultimately inconsistent, let us take them in turn.

(*a*) There cannot be an interruption of a stream unless there is something to interrupt. We start then with an initial dualism, the stream of life, which is reality, and that which interrupts the stream.

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The latter must be as fundamental as the former, for what is real cannot be modified, much less interrupted, by that which is less than real. Even, however, if we waive the necessity for an interrupting something and think of the stream of life as at some moment of its course halting and beginning to flow backward, thus producing the illusion of matter, the potentiality for this dual movement must still be latent at the heart of reality itself. Reality, in fact, must be initially qualified by the potentiality for flow in two different directions. In other words, it is not a homogeneous or a unified flow.

(*b*) But let us suppose that the appearance of matter as well as of plurality is the result of the operations of the intellect, which, inserting artificial stops and gaps in the homogeneous, continuous flow of reality, presents us with a world of solid, static objects. Now the gaps which the intellect inserts are either quite arbitrary or they are not.

If they are quite arbitrary, then

(i) The intellect deceives us as to the nature of reality, making us think of it as many instead of as one. To think intelligently is, therefore, to drift away from reality. Bergson's philosophy is a product of thinking and is supported by reasoned arguments. Therefore it does not faithfully represent the nature of reality, and the conclusion asserted is not true.

(ii) The error we make in thinking that there are many different things is real. Reality, therefore, is, as above, saddled with real error.

(iii) If reality is itself as void of distinction as a sheet of white paper, it seems impossible to explain why we should carve out of it some objects rather than others. Why, in particular, if the objects with which the intellect presents us are those which further our purposes, or represent the trend of our interests, should we carve out missed trains, dentists' drills, and cricket balls that hit us in the eye?

If, on the other hand, as the existence of these intractable and displeasing objects would seem to suggest, the cuts the intellect makes are not quite arbitrary, if, in fact, it finds already existing in the real planes along which the cuts necessarily go, then reality contains within itself in embryo, as it were, all the distinctions which the intellect subsequently works up into the world of separate objects. It is qualified, that is to say, initially by the potentiality not merely for plurality, but for a particular plurality, namely, that which we find in the world around us and not for any other.

How finally does the intellect itself come to be developed? If the intellect is an expression of or an emergence from the flow, the flow must have been initially qualified by the capacity to produce it, carrying, as it were, the seeds of its disruptive view of itself within itself. But in that case it was never a true unity.

We cannot, in fact, have it both ways. If reality, as monistic philosophers assert, is a whole or unity, such that anything short of

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the whole is unreal and anything which impairs the unity illusory, then we cannot generate out of it variety, error, and multiplicity. If, on the other hand, we do not make the unity responsible for the production of variety, error, and multiplicity, then they must exist side by side with the unity, equally real with it, and, in a sense, opposed to it. But in that event the world is not a complete unity. It must be assumed to be at least a duality, and to contain not only the unity, but some principle other than the unity which opposes the unity and causes it to express itself in variety, as a river may be broken up and diversified into innumerable streamlets.

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PHILOSOPHICAL SURVEY

PHILOSOPHY IN FRANCE

PHILOSOPHICAL instruction in the French Universities usually consists in more or less direct preparation for the *licence-ès-lettres* (the "M.A.") and the *agrégation*, or in informal discussion with candidates preparing for the Doctorate. But it has for long been the practice at the Sorbonne in Paris for the Professors to deliver a course of public lectures lasting throughout a half or the whole of the academic year. And since the elements of logic and philosophy are taught in the top form of every *lycée* quite a large part of the ordinary educated public is able to follow with profit the communications of the foremost philosophers. This year, Professor A. Lalande lectures on "General Methodology"; Professor Brunschvicg on "The Object in Perception and in Science"; Professor Delacroix on "Consciousness and Personality"; Dr. Wallon on "Explanation and Constructive Thought in the Child"; Professor Basch on "The Æsthetic Categories," and on "English Æsthetics in the Eighteenth Century," and Professor E. Gilson on "The Main Problems of Mediæval Philosophy." At the Collège de France, Professor Le Roy lectures on "The Primitive Forms of Intelligence," Professor Pierre Janet on "The Psychological Evolution of Personality," and Professor Piéron on "Pain and Affective Reactions."

I

Since 1923 there has flourished an interesting philosophical venture launched by the *Maison d'Études philosophiques* in co-operation with a well-known Paris publisher, M. Gabriel Beauchesne. The *Maison*, which lies in the Haute-Loire at Vals-Près-Le-Puy, is a theological seminary which, founded a century ago, and having passed through many vicissitudes, was reconstructed in 1919. Its professors, and several Thomists of reputation associated with them, issue at irregular intervals the results of their private researches in the form of critical studies and monographs, translations of ancient and modern philosophical classics, editions of unpublished texts, and an invaluable annual survey of French and foreign philosophical publications running into some three hundred pages. These various undertakings are published either as *Cahiers* in the *Archives de Philosophie*[1] (each containing a single study or a group of essays by several writers), or as an independent "one-man" performance in the *Bibliothèque des Archives de Philosophie*. Already six volumes (some score of *Cahiers*) of the former have been published as well as half a dozen works in the *Bibliothèque*, including such substantial efforts as Rousselot's *L'Intellectualisme de S. Thomas*[2] and Diès's *Autour de Platon*.

Of the score of *Cahiers* it is hardly possible to enter into detail here, so I shall restrict myself to some comments on a few of them, and trust to the

[1] The *Cahiers* are sold separately or by subscription in volumes of four, at 80 fr. Paris: Beauchesne.

[2] 2nd end., Paris: Beauchesne. 1928. Pp. lxiv + 260. 33 fr.

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footnote[1] to convey a general impression of their contents. M. GABRIEL PICARD's *Problème critique fondamentale* (Vol. I, cahier ii) is a first-rate piece of argument in criteriology, an experiment in the Cartesian manner rigorously carried out. The question *puisée* is: Are we, having regard to the nature of our cognitive capacities, so constituted as to be *able* to know anything with absolute certainty. Knowledge through concepts cannot lead to a direct acquaintance with existent particulars, so the question arises: How do we come to know existence at all, and what is the relation between the abstract concept of a thing and the thing itself which, as a single existent, is not in direct cognitive relation to us when we are thinking conceptually? A detailed and suggestive examination of this problem leads M. Picard to formulate his reply in two theses: (*i*) in all psychological states, we apprehend in a direct and indubitable manner, by concomitant "concrete reflexion," the existent self and its present conscious acts; and (*ii*) this immediate knowledge of the self is not of a purely empirical kind, but is absolute. It is an experience which reveals the very reality of the self and not merely its appearance. In the very occurrence of such experience, and just because it is of this character, we become possessed of the objective significance of the notion of being; it is an experience that establishes first principles as laws of things no less than as laws of thought, and in this way assures us of the essential trustworthiness of our minds. Thus the solution of fundamental critical problems must start from the conscious self, not in its quality of being conscious but in the fact that it is apprehended as *existing*. (Descartes' *Cogito* is interpreted in a concrete and 'substantialist' manner.) We do not start from the abstract idea of existence nor with 'existence' as a Kantian category or perceptual form under which we apprehend the real, for it is just this idea of existence and the principles entailed by it whose validity then remains to be justified.

Vol. II, cahier 3. M. JOUSSE's *Études de Psychologie linguistique le style oral rythmique mnèmotechnique chez les verbo-moteurs* is hardly to be considered, as its title suggests, a series of studies, but rather an accumulation of classified data, relevant to studies in the psychology of language, drawn from psychology, phonetics, philology and ethnology. The greater part of the book consists of citations which are presumably to be considered mainly as evidence for future work of a more constructive character. The citations are connected into a more or less continuous theme and contribute to an understanding of the transformation of energy in organisms and its relation to expressive movements and attitudes. Gestures are of three kinds: those merely reflex, those involved in emotional expression, and others expressive of logical judgment (*le geste propositionel*). Primitive peoples react to occurrent factors of their environment by transforming them into imitative gestures or by dramatising them in dance. Rhythmical movements of organisms find expression in the rhythmic form which the primitive mind employs to transmit its wisdom and speculation to posterity (how fragments of "religion," science, law, philosophy are preserved in a verbal metric form

[1] *Archives de Philosophie, Vol. I:* Cahier 1, Études d'histoire de la Phil.; 2, Picard, Le Problème Critique fondamental; 3, Études sur Pascal 1623–1923; 4, Maire, Essai bibliographique des *Pensées* de Pascal.—*Vol. II:* 1, Bouyssonie, Solution spiritualiste du Problème moral; 2, Bibliogr. critique; 3, Pour l'histoire de la Phil. grecque; 4, Jousse, Études de Psychologie linguistique.—*Vol. III:* 1, Études de Psychologie et de Phil. scientifique; 2, Études sur S. Thomas, 1225–1925; 3, Bibliogr. critique.—*Vol. IV:* 1, Picard, Sur la Connaissance sensible d'après les scolastiques; 2, Valensin, l'Essence de la Théorie de la Science, trad. du *Sonnenklarer Bericht* de Fichte; 3, Lucien-Brun, Une conception moderne du droit; 4, Bibliogr. critique.—*Vol. V:* 1, Descoqs, Thomisme et Scolastique, à propos de M. Rougier; 2, Études de psych. pédagogique; 3, Bibliogr. critique.—*Vol. VI:* 1, La Vie et l'Evolution: Études de Phil. biologique. Paris: Beauchesne.

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is illustrated by citations in Hebrew, Greek, Chinese and Latin). Rhythmic form is also shown to have a mnemonic function, as when a single person constitutes a compendium of universal knowledge for a whole tribe, by being able to produce orally its traditions as preserved in several thousand learned verses. Communication between deaf-mutes likewise consists of propositional gestures expressive of natural activities (cause-effect relation, agent-patient relation), and a parallel is traced between the order of ideas in the deaf-mute's 'phrase' and that in primitive languages. A great mass of material is brought together in these 240 pages, but there is little attempt to carry their psychological interpretation into any detail—so much M. Jousse himself admits ("it is only a provisional sketch in the rough, and sometimes too much in the rough"). But the directive ideas which determine the arrangement of the material are very suggestive, and form a structure for a much more detailed piece of work.

Thomists will find the *Études sur S. Thomas* (Vol. III, c. 2) well repays reading: M. B. Romeyer discusses Thomas's doctrine of truth, M. G. de Broglie, the Thomist conception of beatitude, and M. Boyer writes on Thomas's view of sense knowledge. M. Riquet critically reconstructs the methods followed by Thomas in examining and evaluating the "authorities" with whose teaching his own was compared; while M. Bouyges makes clear the connections between the theology and the philosophy in the *S. contra Gentiles*.

A little-known work of Fichte, the *Sonnenklarer Bericht* (Vol. IV, c. 2) forms a convenient introduction to his philosophy which has never been translated into English, and is now for the first time translated into French by M. A. Valensin, Chargé de Cours at Lyon. Fichte felt himself much maligned in contemporary satires and attacks, and believed his *Theory of Science* to have been so falsified by his critics and adversaries that he could only hope for fair hearing if he restated it in popular form. This he did in the "Report clear as daylight, addressed to the great public, on the New Philosophy," which was to reply to the current objection that his theory was a tissue of abstractions unrelated to reality. Most misunderstandings about philosophy, he complains, are due to the ignorance of the public as to its proper character. Because philosophy is formulated in ordinary language, it is assumed that its truth and accuracy will be straightway patent to all who know the language without any special training. But the same people would never dream to lay claim to understanding any of the special sciences without some preliminary initiation. M. Valensin has produced a very readable work, and I imagine a text less obscure than Fichte's own. The four lengthy notes on Fichte's philosophy in general add considerably to the value of the translation,

Professor A. Diès, a scholar well known for his Platonic erudition and his translations of the *Parmenides*, the *Theaetetus* and the *Sophist* in the *Collection Budé*, has published two immensely instructive volumes[1] which form a quite up-to-date repertory of the principal French, English, and especially German contributions to Platonism that have appeared during the last half century. Its fifteen chapters fall into these four books: *Livre I, Les Voisinages ; II, Socrate ; III, Les Dialogues ; IV, Esquisses doctrinales.* Book I traces the development of pre-Socratic philosophy, astronomy, anthropology and medicine in Greece. Book II is wholly given up to the Socratic Problem, but the whole of the second volume is devoted to Plato.

[1] Diès, *Autour de Platon.* Bibliothèque des Archives de Philosophie. Paris: Beauchesne. 1927. 2 vols., Pp. xvi + 615. Fr. 36.

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First comes a technical discussion of researches on the chronology and authenticity of texts. Too many historians, alleging "influence," content themselves with simply juxtaposing texts, underlining resemblances, and inferring common "sources." Influences there certainly are—the rhetoric of the sophists, literary erotism, Orphism—but in no case are they simp. borrowings of matter or idea, but "transpositions" of them. Those more interested in positive doctrine than in literary controversy will probably centre their attention in the chapter on "The Idea of Science in Plato," and especially on the clear and useful discussion of the constitutive principles of that idea. The work concludes with two chapters on God and Religion in Plato.

M. JEAN WAHL also has written an attractive study[1] on perhaps the most difficult of the Platonic dialogues, and his discussion brings us to the heart of Platonic metaphysics. This very full analysis of the *Parmenides* states the real problem of that dialogue to turn on the sort of existence which belongs to the Ideas. It first assumes the form of ideal theory originally expounded by Socrates, but its later development takes a different line, *viz.*, that of showing the sort of antinomies that are continually arising in the intelligible order—implying that the Ideas themselves are a 'one' and a 'many.' If the Ideas be conceived as separated entities, we are left with two great difficulties, namely that of determining in what relation the order of Ideas stands to the order of sense objects, and that of determining in what relation the Ideas themselves stand one to another. This result, M. Wahl considers, shows that Plato is indicating in an indirect way the need of "spiritualising" the Ideas. They are to be construed after the nature of hypothetical judgments. Each participates in its opposite and all together constitute an immanent and transcendant process. M. Wahl develops his line of interpretation, in the main a Neo-Platonic one, with great care for detail, and makes out a plausible case for it, though it is not an interpretation that every Platonist would accept.

PROFESSOR BRÉHIER continues his History of Philosophy[2] with fascicule 2 of his first volume on "Antiquity and the Middle Ages." The former part brought us down to Aristotle and the Lyceum: the present one takes us through Stoicism and Epicurianism, the New Academy and Scepticism, Neo-Platonism, Paganism, down to Clement of Alexandria and Christianity in the Orient in the fifth century. One merit of the book is the fine *vue d'ensemble* it gives of a wide field, within the compass of some two hundred and fifty pages. The story of philosophic development in the Hellenistic period is told in a simple and attractive manner, and is nowhere side-tracked by excursions into controverted points of doctrine. The chapters on Stoicism and Neo-Platonism are particularly good and ample, but Thomists will perhaps regret that barely four pages are accorded to S. Augustine. This, however, is all in line with Professor Bréhier's view that "the development of philosophical thought has not been greatly influenced by the advent of Christianity . . . in a word, there is no Christian philosophy" (p. 494). The two fascicules so far published (a further four, continuing the History to the twentieth century are yet to come) form the most straightforward general survey of their period that I know, and the bibliography of texts, commentaries, and monographs at the end of each chapter points the way to the best 'specialist' knowledge available in each case.

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[1] J. WAHL, *Étude sur le Parménide de Platon.* 3 ème edn. Paris: Rieder. 1926. Pp. 276. Fr. 20.

[2] E. BRÉHIER, *Histoire de la Philosophie.* Tome premier: L' Antiquité et le Moyen Âge: II, Période Hellénistique et Romaine. Paris: Félix Alcan. 1927. Pp. 261–525. Fr. 18.

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PHILOSOPHICAL SURVEY

PROFESSOR P. DESCOQS presents the first volume[1] of a work which is to be completed in four, on the Principles of General Metaphysics—an undertaking on the grand scale, carried out in a manner reminiscent of the scholastics. The main exegetical part is composed in Latin and set out in the scholastic form of Declarationes, Theses, Scholia, Corollaria, Objectiones, and Comments, the latter, which are very full, alone being written in French. Professor Descoqs first divides Metaphysics into four sections: Part I, *De Ente in communi*, which subdivides into (i) *De Notione Generale Entis*, and (ii) *De Principiis metaphysicis Entis : De Ente finito et infinito :* Part II, *De Categoriis Entis finiti. De Substantia et Accidente :* Part III, *De Causis*, and Part IV, *De Ordine*. Part I (i) alone is yet published, and has for its subtitle *Éléments d'Ontologie*, but *"Éléments"* is not to be taken as implying that the book is "elementary." It is, in fact, an exceedingly technical and difficult treatise, evidently written for the professional philosopher in whom Descoqs presupposes something approximating to his own gigantic erudition. So evidently the value of the work depends to a great extent upon the philosophical equipment of the reader. One who is not fully *au courant* with ancient and modern metaphysics, Thomist and scholastic philosophy, will scarcely be in a position to derive much profit from attempting this work. Professor Descoqs himself seems astonishingly well informed in contemporary philosophy also: cheek by jowl with references to classical philosophers, we encounter others to Brentano, Bergson, Couturat, Hamelin, Meinong, Russell, McTaggart, Natorp and Meyerson.

The *Prolegomena de Metaphysica in Genere* (pp. 1–130), defines the subject, discusses its divisions, makes explicit its epistemological presuppositions (*viz.*, separate existence of subject and object, the genuine capacity of intellect to attain knowledge), and treats suggestively of philosophical Method. An Hegelian dialectic is to be rejected, not on logical grounds but because it involves certain 'arbitrary' elements (*e.g.*, "associations"). An *a priori* deductive method of the type of Hamelin, or like the "Panmathematism" of Marburg, is likewise to be discarded. (The discussion here is very good). A posteriori method of the extreme type (*e.g.*, Locke's) and Bergson's intuitionism, a 'hybrid,' are also unacceptable. Yet metaphysics must start from experience, for this yields its existential data and constitutes that objective order to which constant recourse must be had in verification. The formal or formative entities of metaphysics are reached by an intuitive perception of primary principles, of the self, and of abstract universals. These prolegomena disposed of, the serious work of *liber primus* commences. It divides into three sections, *De Ente in se ejusque Analogia, De Proprietatibus Entis*, and *De Primus Principiis Rationis*, and covers five hundred pages of close reasoning and detailed criticism, so obviously it is a sheer impossibility to convey an idea of the precise character of its contents within the limits of this survey—or for that matter, even in a full-length review. Enough may have been said however to show that not only those attracted in some measure by Neo-Scholasticism but all who take their metaphysics seriously should come to terms with this work.

M. EDMOND PERRIN has provided a clear and useful *initiation* of forty pages to his annotated translation of S. Thomas's *Somme Théologique*.[2] This first volume is on God, and here the discussions on ideas, truth and error arise. The Latin of the *Summa* may not be excessively difficult, but most

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[1] P. DESCOQS, *Institutiones Metaphysicæ Generalis*. Éléments d'Ontologie. Vol. I. Introductio et Metaphysica de Ente in Communi. Paris: Beauchesne. Pp. 638. Fr. 60.

[2] S. THOMAS D'AQUIN, *Somme Théologique*. I. *Dieu*. Trad. nouvelle, avec introd. et notes par Edmond Perrin. (Les Textes du Christianisme.) Paris: Rieder. 1927. Pp. 217. Fr. 25.

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will find M. Perrin's French easier reading. To the *Bibliothèque thomiste*, FATHER G. THÉRY has contributed two scholarly studies on David of Dinant, and on Alexander d'Aphrodisia.[1]

II

Students of Pâscal are indebted to M. ERNEST JOVY[2] for two studies treating of Pascal's relations to Jacques Forton of St. Ange and to Jean de Silhon who, almost forgotten to-day, was held in high esteem by Balzac, Bayle, Descartes and Arnauld. Silhon, like Pascal, was an apologist of the Christian faith, and in his method of procedure he appears to have anticipated Pascal, who had followed his writings closely, and had not seldom copied from them. These two little studies, detailed and highly documented by one of the most celebrated of Pascalian scholars, are invaluable contributions to a fuller understanding of post-Cartesian thought, with which, however, they presuppose a considerable acquaintance.

DR. MOUY'S[3] book traces the development in Malebranche's philosophy of his views of physical impact between physical bodies. Malebranche is first definitely Cartesian, but little by little he abandons all that is strictly Cartesian in his kinetics, and reaches a conception of matter as neither hard nor fluid but flexible, passive and re-active by movements which are correctly described not by the Cartesian formula of the conservation of matter, but by the Leibnizian principle of vital energy. Cartesian mechanics makes physical impact excessively difficult of explanation, for it must be supposed simple and instantaneous, while really it is complex and briefly enduring. Malebranche, Dr. Mouy decides, had the merit of knowing what to keep and what to reject from Cartesian mechanics, and the necessity of discarding the laws of impact troubled him little, for what he accounted of greatest worth in Descartes was his idealism, so at most only readjustment was required.

We are further indebted to DR. MOUY for discussion of the idea of Progress as it emerges in Renouvian philosophy.[4] Whether or not the idol of the nineteenth century be overthrown, it has not yet entirely lost its divinity. In the first part of his work the author follows Renouvier's successive transformations and revaluations. In youth he "believed in Progress with the perfect tranquillity of a dogmatic Saint-Simonian, and delighted to imagine Pascal being contemporary with Comte, and believing in Progress instead of Original Sin and Redemption." From 1854 Renouvier begins to see that a choice must be made between fatalism and freedom, and consequently between collective progress and individual liberty. His Saint-Simonism recedes. In his *Science of Ethics* he develops critically a philosophy of Progress. Personal liberty is henceforward the great fact: nothing exempts the individual from a personal responsibility to make moral efforts. And this second period of Renouvier's thought concludes with his decision that

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[1] G. THÉRY, *David de Dinant, Étude sur son panthéisme materialiste*. Kain (Belgique): Le Saulchoir. 1925. Pp. 160. Fr. 12.
G. THÉRY, *Alexandre d'Aphrodise, Aperçu sur l'influence de sa noétique*. Kain (Belgique): Le Saulchoir. 1926. Pp. 120. Fr. 12.

[2] E. JOVY, *Pascal et St-Ange*. Études pascaliennes I, Paris: Vrin. 1927. Pp. 218; II, *Pascal et Silhon*. Un excitateur de la pensée pascalienne. Paris: Vrin. 1927. Pp. 116.

[3] P. MOUY, *Les Lois du Choc des Corps d'après Malebranche*. (Bibliothèque d'histoire de a Phil.) Paris: Vrin. 1927. Pp. 92. Fr. 10.

[4] P. MOUY, *L' Idée de Progrès dans la phil. de Renouvier*. (Bibliothèque d'histoire de la Phil.) Paris: Vrin. 1927. Pp. 207. Fr. 20.

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"collective moral progress is an idea bereft of moral interest." The third period (1885–1903) marks a further transition—and a rejection. Religious inspiration now gains fuller expression, and we end with an eschatology that is in all essentials Christian. His Philosophy of Religion takes over the dogma of the Fall, and the conception of moral evolution as a succession of trials that are finite in number, and, not long before his death, he was led to describe the doctrine of progress as "an illusion and a folly." In the second half of his book Dr. Mouy frees himself from exposition and discusses the value of the idea of progress (i) as representing an historical reality, (ii) as a methodological postulate of the social sciences, (iii) as the aim of practical ethics and (iv) as the object of a metaphysical faith (*La Philosophie du Progrès et la Théodicée*). Dr. Mouy agrees with Vacherot that, in controversy about the idea of progress, what is in question is at bottom a dogma and a religion. It is a religion because it responds to the profound desire that the world be brought into accord with our moral consciousness, and because it demands belief which goes beyond, and yet is confirmed by, experiential proofs. But Progress is a *poor* religion. Its insufficiency is radical, for it is unable to explain evil, it holds out only limited and narrow hopes, and is indifferent to the individual. "It is a religion of sociologists, scientists and engineers." But in its behalf, it may be pleaded that the notion of Progress has made it possible to employ the idea of solidarity in Theodicy. Dr. Mouy agrees with Renouvier that a solution to the problem of evil must be sought elsewhere than within the bounds of nature, but, as against Renouvier, he holds that the belief in collective progress retains value, since it signifies "that one can depend on man and consequently on one's self, and that there are reasons for a profound moral hope in human history."

In æsthetics, one of the most interesting of recent works is that of M. PIERRE GUASTALLA.[1] He first shows the variously accepted tests of æsthetic value to be inadequate, and finds beauty to be illusive as compared with ugliness, upon which agreement is easy. There are beauties in nature independent of art, and the subject-matter of æsthetic, the science of the beautiful, therefore extends beyond the arts. On the other hand there are many questions as to the origin and nature of art-products with which æsthetic is not concerned. Again, art satisfies desires some of which may be satisfied in other ways, *e.g.*, in play, dreams, travel. It provides an escape from authority, commonplace fact, and is the most satisfactory outlet for feelings that have, or may have, little or no place in practical life; *e.g.*, the realizing of a whim, exerting an individual influence on one's fellows, etc. But artists, while protesting against prevailing habits, must themselves form technical habits which may serve as instruments of expression. To attempt in one art effects proper to another is not in itself reprehensible, but usually entails some neglect of the effects peculiar to the art that is being practised, and may thus result in bad art. The public misses some of the artist's satisfactions and most of his technical effort, but re-creation and intimate contact with a person's experience have their joys. Much of the volume is devoted to comments on the arts considered one by one. M. Guastalla classifies the arts as (*a*) wholly or mainly representational: painting, drawing, engraving, sculpture, drama, cinematography; (*b*) significative: poetry, literature; and (*c*) evocative: music, architecture, dance, composite art, decorative or applied art.

M. DENIS SAURAT, Professor of French Language and Literature at King's

[1] P. GUASTALLA, *L'Esthétique et l'Art*. Paris: Vrin. 1928. Pp. 205. Fr. 20.

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College, London, is already known to Milton scholars in this country through his work *La Pensée de Milton*. He has now contributed to M. Couchoud's collection *Christianisme* an essay on Milton and "Christian Materialism" in England.[1] He traces a close parallel between Milton's "philosophy" (as set forth in *Paradise Lost*) and the cabalistic writings. There is reason to conclude that Milton had access to these, both in the writings of Robert Fludd and in the original text, also that he was in close touch with the Mortalists and influenced their doctrine so that it should include a final resurrection. His belief that, by withdrawal, God the infinite, created the finite out of Himself, M. Saurat attributes to the Cabalists. He considers Milton's philosophy to be, in some sense, a nineteenth-century philosophy in seventeenth-century terminology. To realize his latent potentialities, God, by withdrawal, created the Son or Demiurge out of Himself. The Son created the world and living creatures. But the liberation of his potentialities, by granting free will, led to anarchy, the triumph of passions over reason (the Fall). At death, body and soul perish temporarily. But that which is part of God cannot be destroyed. At the second creation, the Son or Supreme Intelligence appears among the elect, and restores the supremacy of reason. When this process is fulfilled the Day of Judgment will come and there will be a universal Resurrection, and after a thousand years the elect will be reunited with God, while the damned will be cast out forever into Hell. In his appendix M. Saurat points to Christadelphianism as being a revival of the Mortalist doctrine mediated by the Anabaptists, and cites it as an instance of English conservatism.

I have already drawn attention to the work of M. Émile Meyerson (this *Journal*, Vol. I, 1). His studies *Identité et Réalité, De l' Explication dans les Sciences, La Déduction relativiste* may be comprehensively described as an attempt to understand the fundamental epistemological character of scientific thought through an analysis of its development as exemplified concretely in the history of science. M. André Metz has attempted to make clear within brief compass the main import of M. Myerson's procedure and results. His little book[2] the *Nouvelle Collection scientifique* pretends to nothing beyond a clear and orderly exposition of Meyerson, and forms an admirable introduction to the long and detailed *Explication*. M. Metz first explains Meyerson's attitude toward Positivism and Pragmatism and then passes on to make clear the significance of his two central epistemological principles, *viz.*, (1) science claims to be in contact with a genuine external reality. It is impossible to extrude reference to 'things' from its results, which are thus something more than mere conceptual formulæ or statements of law. (Science is not only "legal," but also *chosiste*.) (2) Science claims to explain. It is explanatory by a variety of procedures, but all of these reduce in the end to a unique, invariable sort of process named "identification." The presence and import of these two interpretative principles is next laid bare in mechanistic and non-mechanistic theories of matter and in the great "conservative" principles of physics: inertia, conservation of energy, conservation and unity of matter. But here and there we find limits imposed on this process of identification; the existence of "irrationals" in the objective order is disclosed, and thus a resistance to the continuity and ultimateness of scientific explanation is encountered. M. Metz is judicious

[1] D. Saurat, *Milton et le matérialisme chrétien en Angleterre*. Paris: Rieder. 1928. Pp. 243. Fr. 12.

[2] A. Metz, *Une Nouvelle Philosophie des Sciences. Le Causalisme de M. Émile Meyerson*. Paris: Félix Alcan. 1928. Pp. vi + 211. Fr. 15.

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in the selection he makes from Meyerson's immense stores of illustration, and the concrete examples are never permitted to block out of view the theme they illustrate. One hesitates however when M. Metz assigns, in his sub-title, the name *Causalisme* to this doctrine, for surely Meyerson's idea that explanation proceeds in proportion as we approximate to identification results in the notion of cause being ultimately supplanted. But the aptness of a title is a minor matter. M. Metz has certainly furnished a useful first-aid to M. Meyerson's solid tomes.

A further work by M. Meyerson on the *Le Cheminement de la Pensée*, a critical investigation of the history of logic, is now on the point of going to press. His last published work, *La Déduction relativiste*, was the subject of a laudatory article by Einstein in *Les Nouvelles littéraires* recently, in which M. Meyerson is said to be one of the exceedingly few philosophical writers on Relativity who shows himself to have really assimilated its principles.

STANLEY V. KEELING.

PHILOSOPHY IN GERMANY

SUMMARY: *In this survey I first consider two introductory books—the one an introduction to the theory of knowledge, the other an introduction to logic —by August Messer and Arthur Drews respectively. I then proceed to E. v. Aster's very interesting* History of English Philosophy, *to a phenomenological study by Arnold Metzger, and to a discussion of pluralism, monism, and dualism, by Boris Jakowenko. I conclude with notices of important new editions of Hegel, Franz Brentano, and Cusanus, and with a reference to the death of Max Scheler.*

AUGUST MESSER, who is Professor of Philosophy at Giessen, has just published a revised edition of his *Introduction to the Theory of Knowledge*.[1] This book is intended to be literally an introduction suitable for those who have no previous knowledge of the subject. But the author's own views are indicated, though naturally not at length. That mostly German writers are examined adds a further interest for English readers. As an introduction the book covers the ground very satisfactorily, including a consideration of judgments of value and of religious belief. The last chapter, about which more is said below, is a comparison of faith and knowledge. The book deals first with the general character of knowledge, passing to a discussion of its source and bringing many different 'isms'—dogmatism, pragmatism, etc.—into review. Then come several chapters on the object of experience, which deal with realism (naïve and critical), idealism (subjective and objective), phenomenalism, and other such contributions to the problem. Finally, there is a brief study of the various sciences and a comparison of faith and knowledge.

Messer divides objects into two classes, real and ideal. A *real* object is independent of consciousness, an *ideal* object is only thought of (*bloss gedacht*). In the strict sense of *a priori*, we can make *a priori* propositions only about ideal objects, and only the formal sciences, such as mathematics, pure logic, and pure ethics, employ them. In this strict sense, *a priori* means independent of experience and dependent on thought. But "thought necessity" is independent of thinking as a psychical process, and is grounded in what is thought of. All such *a priori* propositions are analytic. In the less strict sense *a priori* means "relatively independent of experience"; and such *a priori* propositions, though not actually parts of sciences which deal with real objects, are presupposed

[1] *Einführung in die Erkenntistheorie.* Leipzig: Felix Meiner. 1927. (Third revised edition.)

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by them—as, for example, the proposition that every event has a cause. To the Kantian question—"How are synthetic judgments *a priori* possible?"—Messer answers that they are not possible at all (in the strict sense of *a priori*). A synthetic proposition must be about a real object, an object which is independent of thought; and there can be no *a priori* proposition about such an object. Messer finds the deepest root of Kant's phenomenalism, and indeed of all phenomenalism, in a belief in synthetic *a priori* propositions. He argues that, being synthetic, such propositions must be about existent objects; and, being *a priori*, they must be about objects dependent on thought. Hence existent objects must be appearances, dependent on thought. He agrees with Kant that there can be no *a priori* science of Metaphysics; but he believes that there *is* a science of Metaphysics, which deals with real objects, and therefore cannot be *a priori*. These real objects include transcendent objects, that is, objects of which there is no *immediate* awareness, and metaphysics deals with points about them which no special science raises.

Messer is a critical realist, and says that critical differs from naïve realism mainly through greater insight into the nature of perception and of knowledge in general. He refers to critical realists, such as Kulpe and Driesch, who believe subjective idealism to be the best starting-point for realism. But he points out that the arguments which lead from one to the other establish no more than the probability of an independent world, whereas he thinks we can have "practical certainty." This differs from "theoretical certainty," but is equally free of doubt. Messer attributes both subjective idealism, on the one hand, and such theories as the empirocriticism of Avenarius, on the other, to too abstract a conception of the immediately given. According to Avenarius there is no self or inner world other than a central nervous system.

Logical idealism (also called objective and transcendental) is considered with special reference to Cohen of the Marburg school. Messer distinguishes two main elements in this idealism: (i) the transcendental-logical method (called by Cohen 'Logic'), and (ii) the theory that "being is the being of thought" (Cohen). The transcendental method is an *a priori* inquiry into the possibilities of knowledge. Messer thinks that the logical idealists rightly emphasize the distinction between a genetic-psychological and a transcendental-logical method, and he welcomes the use of the latter for the theory of knowledge. But he thinks that this use is compatible with realism. He also agrees with the logical idealists in several of their criticisms of naïve realism, maintaining, however, that one can avoid these errors without becoming an idealist. He even goes further. Remarking of the logical idealists that "their speech is for the most part dark," he proceeds to interpret several of their statements realistically. Thus, he says, the denial of a reality which exists in absolute independence may simply mean the denial of the thing-in-itself as something in no way related to ourselves; and if "consciousness-in-general" is simply the totality of objectively valid concepts, then one need object to nothing but the name. However, Messer's interpretations here seem rather too optimistic.

Messer considers faith from both the Catholic and the Protestant points of view. As a Catholic definition of faith he gives the following: "an undoubting acceptance of what God has revealed, because he has revealed it." The ground of acceptance is the authority of God, and the Church determines what is to be accepted. Anyone who doubts the foundations of the system—that is, the existence of God or the infallibility of the Church—incurs excommunication. The researches of the Catholic thinker are limited in many ways; for example, those of the scientist by the belief in miracles, those of the metaphysician by the necessity of a theistic explanation and by the acceptance of immortality

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and free will. The Protestant, continues Messer, puts less emphasis on belief and more on the relation between God and the individual. There is now a tendency among Protestants to regard faith and knowledge as so different from each other that neither can either hinder or help the other. Messer considers several forms in which the distinction is drawn, inquiring whether conflict can really be avoided in this way. According to some, the basis of distinction is psychological, and by them faith is regarded as a form of feeling or willing. But this kind of distinction does not avoid conflict. If, for example, faith be feeling, then either it has an objective reference or not. If it has not, then it will be compatible with any view of the universe, and can no longer be called Christian; if it has, then it contains an element of judgment, which brings it into the sphere of knowledge. This dilemma confronts every attempted distinction, and each fails as a means of abolishing conflict. These attempts include the suppositions that faith is subjective in an epistemological sense and that it is a postulate of practical reason. To say that faith is epistemologically subjective is to say that its beliefs are valid only for the experiencing subject—and this, says Messer, gives God only the status of the golden mountain. To say that faith is a postulate of practical reason is to argue (as did Kant) that the 'categorical imperative' of morality necessitates free will, immortality, and the existence of God. Messer points out that this argument abolishes conflict only on the Kantian hypothesis that there can be no science of metaphysics. Modern versions of the theory hold that life has no meaning without God and immortality, and are, of course, open to the objection that one cannot base a judgment of being on a judgment of value.

A Textbook of Logic,[1] by ARTHUR DREWS, follows the usual lines and deals with the usual classifications of concept, judgment, and syllogism. But an unusually large section is devoted to scientific method, and many problems, often of an epistemological kind, are discussed in detail. In the first section, which deals in time-honoured manner with the nature of logic and its relation to other sciences, there is a discussion of the controversy between *Psychologismus* and *Logismus*. Drews himself takes a middle position, regarding concepts and logical laws neither as psychological occurrences nor as entities independent of individual minds. This middle position is none too easy to understand, and is expressed in the statement that concepts and logical laws are necessities of a superindividual reason which is identical in all individuals. Psychological processes are the means by which the individual becomes conscious of them, and indeed by which they are realised. In the opening of the second section the controversy is again raised, with reference to the concept, and there is a criticism of Husserl's theory of the concept as an independent universal and of *Wesensschau* (intuition of essence) by which it is apprehended. According to Drews, who throughout his book lays much emphasis on unconscious processes, the concept is a product of unconscious thinking. Only the product itself comes to consciousness, and even this is never immediately presented. There are no *a priori* concepts constructed out of pure thought, without reference to experienced particulars. The categories are not concepts, but functions of superindividual reason, by which it imposes order on sensations. Thus, for example, substantiality is a category in virtue of which we regard sensations as belonging to something. We know the categories—that is, unconscious categorical activities—mediately through categorical concepts which we form through experience of wholes synthesized by the categories. Drews emphasizes his disagreement with Kant, but there are also important resemblances between them.

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[1] *Lehrbuch der Logik*. Berlin: Georg Stilke. 1928. Pp. 544.

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After dealing with many questions concerning concepts—classification, definition, etc.—Drews comes to the judgment. He considers that every judgment contains two and only two logical constituents, subject and predicate, the copula being a form and not a constituent. The relation between subject and predicate must be one of partial identity, the predicate is identical with part of the subject. For example, in 'Sugar is sweet,' 'sweet' is part of the concept 'sugar.' Judging is an unconscious process of abstracting and reuniting, and very much resembles the construction of concepts. As Drews holds that every judgment is analytic, he rejects the Kantian distinction between analytic and synthetic judgments. One can distinguish analytic from synthetic judgments only by reference to the judger's knowledge. A judgment is synthetic if the predicate attributes to the subject something which the person judging had not hitherto known it to contain. There are *a priori* judgments, which deal only with thought-dependent entities, and there are judgments of experience, which deal only with existing entities. Both agree in being analytic. Thus Drews holds, as does Messer, that no judgment which deals with existence is *a priori*, and he looks on the question—'How are synthetic *a priori* judgments possible?'—as nonsensical.

The rest of this section deals with classifications of judgments and forms of syllogism, concluding with a discussion of causality. It may be mentioned that Drews regards both negative judgments and judgments of quantity as complex. Thus 'S is not P' = '*S is P* is false.' 'All S is P' = '*S is P* is valid for all S.' He believes that causality does not apply to sensations. It *may* relate existents independent of consciousness, but we can say no more than that there probably are such existents and that it probably relates them.

The last section, a detailed examination of scientific method, is divided into three parts: (i) methods of discovery (heuristic), (ii) methods of proof, and (iii) systemization. We have seen that Drews agrees with Messer in regarding the formal sciences as purely *a priori* and restricted to thought-dependent entities—while the sciences which deal with existent objects are *a posteriori*. Thus pure mathematics, which consists simply of a few fundamental concepts and what can be deduced from them, has no application to the world of existence. Applied mathematics has such an application, but is not *a priori*—what mathematical propositions apply to existent things is a matter of experience. Drews also agrees with Messer in his view of metaphysics. Metaphysics is a science which deals with existent things and its methods are inductive. If this is realized, he says, people may cease to expect either everything or nothing from it. Its results, as those of every science, are only probable. This section contains a long criticism of intuition as an immediate apprehension of entities independent of consciousness. Husserl's *Wesensschau* is a case of such intuition, though in this context Drews has mainly in view the intuition of existent objects. He gives many examples, including theories which identify thought and being like those of Schelling and Hegel, which he apparently regards as forms of an intuition theory. He thinks that if intuition were possible, metaphysics would be a deductive science—in deducing what is involved in the laws of thought, one would discover the nature of reality. But the final refutation of such intuition is this, that none of the realities one is supposed to intuit can be a content of consciousness. Thus the belief in such intuition is rejected as a fantasy of naïve realists.

The *History of English Philosophy*,[1] by E. v. ASTER, Professor at Giessen, is a very interesting book. On hearing the title one is reminded of the scarcity

[1] *Geschichte der englischen Philosophie.* Bielefeld und Leipzig: Velhagen und Klasing. 1927. Pp. 215.

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of histories of English philosophy, on seeing the book one can be sure that its external aspect at least is worthy of high praise. Its binding and printing are exceptionally agreeable. One is not disappointed when one comes to more fundamental points. The history, being short, cannot be very detailed, but the arrangement is well balanced and the expositions are clear and comprehensive. There is an almost total absence of criticism, the course of pure exposition being broken only by comparisons of philosophers with each other and by accounts of the influences on their development. The history begins with Bacon and ends with Alexander and Russell, though some important philosophers of the present are omitted. v. Aster finds the development of English philosophy as "self contained, continuous, and consistent, as is the history of England in general." The continent was the scene of political changes in consequence of which the philosophy of the nineteenth was discontinuous with that of the eighteenth century. But in England the Mills and their successors continued the line which had led from Locke to Hume. "Sobriety and clarity, a clarity which repudiates nothing so keenly as incomprehensibility and obscurity masquerading as profundity, a sobriety which wishes to see things only as they really are, to penetrate and reveal them in their simple connections, without clothing its exposition in brilliant ingenuity and surprising turns," these are the main characteristics and excellences of English philosophy. It is concerned with analysis rather than with the construction of systems, with problems near at hand rather than with remote ones. On the whole it is a philosophy of common sense, and Bacon's attack on the tyranny of scholastic concepts sets its course. Even the neo-Hegelians, like Bradley, repudiate an *a priori* deductive construction of the world (though here Aster overlooks McTaggart). As a result of their common sense and practical bias, English philosophers tend to be economists and psychologists, whereas continental philosophers tend to be mathematicians. v. Aster holds that the most important opposition in modern philosophy is that between empiricism and 'apriorism' and "it is English philosophy which has performed the historical service, of having developed the standpoint of empiricism with all the consequences which arise from it, as much in the sphere of knowledge as in that of ethics." v. Aster's book can be regarded as the history of this development.

The Object of Knowledge,[1] by ARNOLD METZGER, is a phenomenological study very clearly inspired by Husserl. It exhibits that absence of padding and that attention to detail frequent in these studies. It contains an interesting account of phenomenological method, a topic on which one welcomes information. The emphasis is on the psychological aspect of the method. Phenomenology, says Metzger, reaches its conclusions concerning objects through studying a cognitive situation. It is the study of an object in so far as it presents itself. Metzger uses each of the terms in the correlation 'presentation-object' in the widest sense. A presenting experience is any experience of an object—for example, perceiving, imagining, judging; an object is anything so presented —for example, thing, fact, essence. A phenomenon is an object in this wide sense, and phenomenology describes phenomena, always basing its description on a preliminary examination of the experiences in which the phenomena are presented. Phenomenological studies, says Metzger, are usually restricted to some particular class of objects; they are, in fact, usually concerned with the essence of some class of things. His own study is concerned with object as

[1] *Der Gegenstand der Erkenntnis. Studien zur Phänomenologie des Gegenstandes.* (Ester Teil. Halle a.d.S.: Max Niemeyer. 1925. Pp. 157.

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such. The meaning of 'object' which he considers is just the meaning which is left when the properties distinguishing objects from each other are ruled out.

Faithful to his method, Metzger reaches each new conclusion through an examination of experience. The experiences which he considers are cognitions of things, and he directs his attention from object as such to primary object —the object, that is, through which we have knowledge of all objects. This is the individual. All other objects are known through the individual; however de-individualized they may be, they remain abstractions from it. Metzger's emphasis on the importance of non-individual objects is combined with assertion of their dependence on the individual. The primary object, when formalized, reveals itself as the unity of existence and essence.

There are different kinds of essence. There is primary essence, which is related to other essences and our knowledge of them, as is the individual to all objects and all knowledge. It is the content of the individual thing, and is referred to as individualized essence; it is the most specific determination of essence—for example, this determinate shade of red which belongs to this gown. Content is first presented in synthesis, but as the interest of the self in phenomena grows, it breaks up the content, describing it analytically. In this way we arrive at knowledge of types and of essences in the strict sense. Briefly, a type is the product of inductive generalization, an essence of *a priori* necessary connection. An essence in this strict sense, is very different from a content. A content is the "last specific *differens*," an essence is highly general; a content is made up of characteristics joined together accidentally, an essence of characteristics necessary to each other.

Metzger concludes by considering the unity of existence and essence which constitutes the individual. There is an *a priori* necessary connection between existence and essence, and the case is peculiar because this necessity does not hold between properties. To take this unity as a starting-point is fundamental for the consideration of Kant, to whom Metzger refers in detail and a study of whom he announces his intention to publish. Metzger is in sympathy with the transcendental method, but insists that phenomenological method is not bound up with the transcendental outlook. It can assume, as Metzger assumes, that the object is given, provided that it considers the object in connection with the cognitive interest of the experiment. On the other hand, so Metzger holds, phenomenological method is not limited to a description of the subject's interest and the object's nature. It can become transcendental, and that it does by inquiring as to what factors in subjective experience condition an object.

In *The Essence of Pluralism*[1] Boris Jakowenko asserts that the problem of the One and the Many is the fundamental problem of philosophy on which all other philosophical problems depend. Unfortunately we are never told exactly what this problem is. Four different attempted solutions are distinguished: dualism, monism, monopluralism, and pluralism. The author is a grim believer in pluralism and criticizes the other theories with special reference to modern exponents. Dualism is taken to include such different distinctions as the Cartesian division of substance into matter and mind and the Kantian distinction between form and matter. Lask, N. Hartmann, and Losskij are considered as modern exponents. Jakowenko regards dualism as the natural beginning of philosophic activity which more mature thinking rejects. It reduces a real plurality to a duality, and then finds it impossible to

[1] *Vom Wesen des Pluralismus: ein Beitrag zur Klärung und Lösung des philosophischen Fundamentalproblems.* Bonn: Friedrich Cohen. 1928. Pp. 74.

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explain how the two elements of its duality are related. Monism tries to reduce everything to one principle and one beginning. It is an unsuccessful attempt to identify the two elements of the dualism from which it arises. As modern monists, Bradley, Spir, and Gentile are considered. The failure of monism leads to monopluralism, to systems such as those of Leibniz and Hegel, which attempt to combine an essential unity with acknowledged differences. Royce, H. Cohen, McTaggart, and Alexander are regarded as recent monopluralists. These attempts at combination fail because either no explanation is given of the relation between the unity and the differences, or an explanation is given which involves a contradiction.

Pluralism abolishes the search for a primary principle. It does not seek the unity of the many, but acknowledges the plurality of unities—a unity being a self-dependent entity. It is not a system but a method by which an entity is considered as distinct and for itself. Jakowenko asserts that the plurality of A and B does not imply their relatedness. Relatedness is implied only when the process of judging that A is absolutely different from B is inserted as a third term; but the independence of A and B is in no way dependent on the judgment which asserts it. The creed of the pluralist is something as follows: A belief in rational intuition as the source of philosophic knowledge and a distrust of sense-intuition and intellectual construction; a belief in the absoluteness and plurality of truths, in the absoluteness and plurality of essences, in the absoluteness and plurality of values.

Several important editions of collected philosophical works are being undertaken. There is G. LASSON'S edition of HEGEL,[1] which is to contain twenty-four volumes. Of these, 1–9 and 12–14 have already appeared. This edition is based on a more careful examination of manuscripts than has hitherto taken place, and in consequence is appearing very slowly.

Another edition which is still incomplete is that of FRANZ BRENTANO'S works. Most of those already published have been edited by OSKAR KRAUS, who contributes an article on Brentano to the *International Philosophical News*, 1928, No. 2,[2] called "Franz Brentano's Place in Contemporary Philosophy." Here he points out the many developments to which the philosophy of Brentano has led. Among those whom he influenced by direct contact are Stumpf, Marty, Husserl, Meinong, and Ehrenfels—the last three being associated respectively with "Phenomenology," "the theory of Objects," and "the theory of *Gestalt*." But his influence has spread much further, for example to Dilthey, and to the theory of value as worked out by Scheler and others.

We may also note that the Heidelberg Academy of Sciences has undertaken to publish the collected works of Nicolaus Cusanus (Nicholas of Cusa). Professor Hoffmann of Heidelberg, writing in the periodical *Researches and Advances*, points out that, while this will be the first critical edition of Cusanus, all his important works have already been published.[3] Cusanus, says Hoffmann, has a complex spiritual ancestry—Platonic, Christian, and Jewish—and a complex opposition, being opposed to Thomism, mysticism, and nominalism. He is now being recognized as far more than a forerunner of the Renaissance. It is being seen that in Descartes, Spinoza, and Leibniz his work reaches its full development. H. Cohen and (more recently) Cassirer have done much to show that it is he who began the new epoch in philosophy.

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[1] *Hegels Sämtliche Werke. Erste kritische Gesamtausgabe.* Leipzig: Felix Meiner.
[2] *Philosophischer Weltanzeiger*, 1928, No. 2, edited by P. FELDKELLER.
[3] *Forschungen und Fortschritte*, edited by K. KERKHOF, vol. iv, No. 22–23. (August, 1928). Berlin.

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During the past year the death has occurred of MAX SCHELER, Professor of Sociology and Philosophy at Cologne. He was greatly admired by his contemporaries, and has been described as the most representative figure of German philosophy. A brief account of his philosophy of value (he applied the phenomenological method to ethics) was given in an earlier survey, and it is hoped later to provide a fuller description of all his most important works.

HELEN KNIGHT.

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NEW BOOKS

Greek Philosophy before Plato. By ROBERT SCOON, B.A., Ph.D. (Princeton University Press; and London: Humphrey Milford. 1928. Pp. viii+353. Price 3 dollars 50; 16s.)

Plato's Theory of Ethics. By R. C. LODGE. (London: Kegan Paul, French, Trübner & Co., Ltd. 1928. Pp. xiv + 558. Price 21s.)

The Hippias Major, attributed to Plato. Edited, with Introductory Essay and Commentary, by DOROTHY TARRANT, M.A. (Cambridge University Press. 1928. Pp. lxxxiv + 104. Price 12s. 6d.)

A consideration of these three books inevitably suggests the question, what conditions a book on Greek Philosophy must fulfil at this time of day to arouse our interest. For there are books, and good books, and—at any rate, if we do not confine ourselves to the English language—a great number of them in existence on every branch of the subject. This does not, of course, mean that there cannot be room for any more. But it does mean that they should have something to say which has not already been said. We cannot expect a new discovery or a view different from any that has been put forward hitherto. Indeed, there are many points on which this could only be attained by being plainly wrong. But we may at least ask that the subject should be approached from an individual point of view, so that points should be emphasized and lines of approach suggested which might otherwise escape us.

These demands are fulfilled to differing degrees by the books before us. To take them in chronological order of the subjects, Professor Scoon has set himself the most difficult task. For about early Greek philosophy we really are tempted to say: We have Burnet and the prophets: what need is there of any more? There has, I think, been more written on this period than on any other. And mainly, perhaps, owing to the comparative paucity of our material, but partly, also, owing to the extreme skill with which it was used by the great scholar whose recent death we so deplore, there seem to be fewer questions here on which opposite opinion may still be reasonably maintained. It is a sign of Professor Scoon's judgment and knowledge that on most points he adopts a similar view to that of Burnet. But, it must be confessed, that this does not add to the interest of his work. The most important point on which he differs from him is in his acceptance of the fragments of *Philolaus* as genuine. But he does not seem quite to do justice to the strength of the arguments on the other side.

He does, however, give us a somewhat novel point of view from which the development of the earlier philosophy may be regarded. To him the essential point of the work of the first philosophers lay in "the appreciation that the regular sequences of nature . . . were evidences that physical events were not caused by some divine caprice, but proceeded with a regularity similar to that which characterized the action of men in political societies." This meant that they began "to think of the world in terms of known human activity instead of the imagined behaviour of mythical divinities." It meant also that "their explanations differed from the previous ones in stopping with the connection between observed phenomena."

I cannot persuade myself that this is a happy thought. I cannot find

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any real evidence that the contrast between human orderliness and divine caprice ever exercised much influence on Greek thought, if, indeed, it ever occurred to Greek thinkers at all. And the other point seems to me even more mistaken. It suggests that Greek philosophical thought was developing along the lines of Positivism to the belief that the only knowledge of nature that we could have consisted in the observation and recording of observed regularities of sequence. Whereas the main point, as it seems to me, of the line of thought which they initiated lay in the conviction that it was necessary to go beyond this to something underlying these phenomena in order to get at an explanation which would satisfy the demands of the reason. A study of the work of Émile Meyerson would, I think, have given Professor Scoon a truer understanding of this point.

A peculiarity of method in the book lies in its division into two sections, the first being devoted to a study of the individual systems of thought, while the second, which is not much inferior in length, is devoted to "a retrospect over the general course of Greek philosophy." While there are certain advantages in this, it seems to involve an unnecessary amount of overlapping and repetition, and the students who took this book as their introduction to the subject might find an irritating amount of reference backwards and forwards necessary. But it would give an incorrect view of the book's qualities to end on the note of criticism. It is, beyond dispute, the work of an accurate and careful scholar and a fresh and original mind. Even those who cannot accept the new points of view suggested will derive benefit from having these put before them.

When we come to Plato, it is more obvious that there is room for a good deal more to be written on the subject. The one large-scale work in English, published in recent years, while the work of a scholar of unrivalled authority, is written from a special point of view, and follows a special method of presentation. So that there would be plenty of reason to welcome further books which approached the subject from a different point of view and presented it in a different manner. It was not, therefore, strictly necessary in order to secure such a welcome for Professor Lodge to adopt so startlingly original a line of approach as that adopted in his new book. I cannot at the moment recall a single other writer on Plato who has attempted to handle his subject on these lines.

We get our first shock when we read in Professor Lodge's preface, "In Plato himself, the fourth-century Athenian, in the obscure problems connected with his personal history, in the motives which led him to write, in the intentions behind the publication of Dialogues so very different as the *Protagoras* and the *Parmenides*, and in the personal evolution of his views—in short, in all the questions which especially interest philologists" [this word is used throughout the book in its German, not its English, meaning]—"I take little interest. What Plato the Athenian personally supposed or wished his words to mean is a very delicate inquiry which I prefer to leave to those who have faith that their methods will enable them to pursue it successfully." The method in which Professor Lodge has faith is that of taking the different statements in the various dialogues on the chief ethical topics—who is the moral judge, what is the moral criterion, what is the highest good, etc., etc.—or setting them out side by side, and seeing if from them we can extract "a single system of dialectically consistent meanings."

The way in which this is to be done is, apparently, to give in the author's own words—there are hardly any direct quotations from Plato in the book—a brief statement of what is said about these different points in the dialogues. We are very rarely given the context of the statement. We are not told

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at what stage in what argument the remark is made, nor even who makes it. To find out in which dialogue it occurs we have generally to look at the end of the book, to which the brief references given are banished. As might be expected, the statements selected in this manner often appear to differ from each other. So, having thus created his own difficulties, Professor Lodge proceeds to solve them by explaining which point of view seems to him to be the most central and important. It is not always quite clear whether the point of view is that which Plato himself thought most important or that which Professor Lodge thinks that he ought to have thought most important in order to make his views "dialectically consistent."

This method of exposition does not make very lively reading. That, perhaps, does not greatly matter. What does matter is the assumption on which it rests. And that, so far as I understand it, seems to me fundamentally false. The distinction made by Professor Lodge between the logical or dialectical and the psychological or genetic treatment of the thought of any philosopher may have a certain limited value, as indicating a difference of starting-point in our investigations. But if pursued very far it becomes a false and artificial abstraction. And to no kind of literature is it so inapplicable as to Plato's dialogues. For whatever view we take of these, it is surely obvious on the face of it that they are occasional works, in the sense that each is a particular discussion of a particular subject; even the *Republic* is very far from a systematic exposition of a complete philosophy. Further, they are real discussions, in which views may be put forward, examined, modified, and even rejected before we reach the conclusion. So that it is hardly too much to say that any particular remark made in the course of the discussion is not even intelligible unless we see it in its place in the whole argument.

Furthermore, it is not a matter of dispute that the dialogues were written at different intervals over a long period. There is, therefore, a high degree of probability that some degree of development, and perhaps even of definite change of view, is to be found in them. Does it not seem absurd, then, to labour to make different statements consistent with each other without even considering the possibility, which must be present, that they might not be intended to be consistent at all, but represent a real change of view? It follows then that some attempt must be made to arrive at a conclusion about the chronological order of at least the mere important dialogues. And, in fact, nearly all commentators have found themselves obliged to adopt some hypothesis on this subject. No doubt, as Professor Lodge insists, we are still far from unanimity and certainty on this point, though I think he exaggerates the differences. But it is most unlikely that any method of approach, his own or any other, will ever bring about absolute unanimity. Indeed, people who are frightened by differences of opinion had better keep away altogether from philosophical discussion in general and Platonic interpretation in particular.

The pity of it is that Professor Lodge clearly has so many of the qualifications needed for giving us a very different and far more valuable kind of book. Any reader of his work, who already knows a fair amount about Plato, must be struck by his profound knowledge and careful scholarship, as well as by his obvious love for his subject. But all this seems to me to be largely wasted by the perversity of his method of approach and exposition. Such qualities, of course, can never be entirely wasted. Students of the subject may often gather suggestions that are worth considering from what he has to say, particularly when, as in the case of many of the passages dealing with the *Republic*, he is confining himself mainly to the exposition of the argument of one particular dialogue. His views on the individual problems of interpretation, while naturally often open to dispute, are never negligible. But it is obvious

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that he did not arrive at these views by the use of his own method. And it is, therefore, not at all obvious why he should suppose that this method should prove helpful or carry conviction to his readers.

The last book on our list is of the kind for which there will always be welcome. It is a very careful and scholarly treatment of one of the less known and, it must be confessed, less interesting of the dialogues attributed to Plato. Dr. Tarrant comes to the conclusion that the dialogue is not Plato's own work, and on the whole I think she convinces me. Certainty on the point is obviously unattainable. There is nothing glaringly unplatonic about the dialogue. Our judgment will depend on a number of imponderabilia, which Dr. Tarrant handles with admirable tact and discrimination. She does not, however, regard the work as an intentional forgery. She suggests that it may be an attempt to write a Socratic dialogue by a younger member of the Academy, who would naturally tend to mould his style on that of his master. This, again, appeals to me as probable. Indeed, even if we did not accept that explanation of this dialogue, there are other dialogues included in the canon which seem undoubtedly fourth-century and even passably Platonic in language, but which even the most conservative scholars do not regard as Plato's work. And to account for this we must suppose that something of the kind suggested was going on.

I find it more difficult to accept her account of the dialogue as "an exercise upon various of the logico-metaphysical terms of the *Phædo*," and still more difficult to regard it as "bringing its [the *Phædo's*] ontology to a *reductio ad absurdum*," instead of being a simple study in Socratic definition, influenced very likely by Plato's metaphysical views, but with no special reference to them. There appears to me here to be a certain danger of exaggerating the metaphysical significance of relatively casual remarks, and more particularly a tendency to exaggerate the technical nature of some of the terminology (such as the phrase αὐτὸ τὸ), which, when Plato first used it, at any rate, appears to have been part of the phraseology of current speech. And several other points in the very full and most valuable introductory essay might give rise to possible controversy. Among other things, the order assigned to the dialogues seems open to discussion on some points. The relative positions of the *Phædo* and the *Phædrus* should be, according to what seem to me the best-founded opinions, the reverse of that ascribed to them by Dr. Tarrant. It would be out of place to go more fully into these points of detail here. And I can only end by recommending the book most warmly to students of Plato. We should welcome further editions of the more neglected dialogues from the same hand.

G. C. FIELD.

Kant's Critique of Teleological Judgment. Translated, with an Introduction, Notes, and Analytical Index, by J. C. MEREDITH, Litt.D., K.C., Judge of the High Court, Irish Free State. (Oxford: Clarendon Press, Humphrey Milford. 1928. Pp. xcvii + 208. Price 12s. 6d.)

This volume only covers the second part of *The Critique of Judgment*, the first part having been translated by the same author in 1911; but since that portion deals with quite a different subject, namely æsthetics, the work does not suffer by this separation, and the second book may be read without presupposing a knowledge of the first. *The Critique of Teleological Judgment*, which is incidentally much easier to follow than *The Critique of Pure Reason*, gives Kant's answer to one of the chief problems which is agitating philo-

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sophical thought at the present moment, namely the conflict between mechanistic and non-mechanistic views of the universe and particularly of living organisms. It defines the attitude which Science should assume towards the concept of purpose, and provides what is still often considered the classical treatment of the Argument from Design. Though it is not such an epoch-making book as *The Critique of Pure Reason*, there can be no doubt of its importance for the student of philosophy, and therefore of the value of a translation like that provided by Judge Meredith. The latter has added, besides a few explanatory notes, an introduction which contains much original and able thought, but could and ought to have been made a great deal clearer. In its present form it suffers very decidedly from obscurity. Fortunately this does not apply to the translation, which is clear and accurate and can certainly be recommended to students. It seems to me a little too free in some places where there is no need for it, but this is a difference of opinion.

The problem of the book is the fact that experience seems throughout to reveal bodily organs which are marvellously adapted to the ends of the creatures which possess them, and further that there is much in their physical development which we can only explain by reference to ends (purposes), and which yet cannot be due to the conscious design of the animal who benefits by them, *e.g.* the way in which one lung grows so as to do double work if the other is injured. Hence biology is driven, as Kant puts it, to ask of every part of an animal's body not only what is its cause? but what is its purpose? This is at any rate to treat organisms *as if* they were designed, and suggests the conclusion that they were deliberately created by a mind. But while Kant was very strongly impressed by the evidence of design in nature and was firmly convinced of the necessity of introducing the concept of end or purpose into biology, he was equally convinced that the human intellect was incapable of penetrating such mysteries as the ultimate ground of nature, or indeed of knowing anything more than the *appearance* to us of reality. (His view is that the belief in God is adequately justified on moral grounds, but that we must not regard it as capable of proof in the strict sense of the term.) He reconciles the two attitudes by his distinction between "constitutive" and "regulative" principles. "Constitutive" principles are those which can be proved and must be accepted as necessarily true of Nature; "regulative" principles do not necessarily give us any objective truth at all even about appearances, but only express the way in which we are necessarily bound to look at Nature, the ideals of knowledge by which the scientist guides his policy in research, but which he must not affirm as realized fact. Thus the principle that every change must be necessarily connected by causal laws with preceding changes is for Kant "constitutive," but the principle that this causation is always mechanical, *i.e.* of the same general kind as that recognized in physics, is at the most "regulative." It is, therefore, not necessarily in conflict with the other regulative principle, that at least *some* physical things, *i.e.* living organisms, are to be regarded as produced and developed not by mechanism but by another type of causation, *i.e.* according to purposes, for from another point of view this way of looking at Nature is, Kant maintains, equally necessary to the human mind. On the other hand, he insists, we must not on the ground of apparent design in Nature affirm that the world was actually designed by a mind; all we have a right to say is that we must think of the world *as if* it were thus designed. Judge Meredith here brings against Kant the criticism that, if he means to assert that this furnishes any evidence for the existence of God, he is in conflict with his own principles according to which no such evidence could possibly be derived from phenomena, but only from the moral law; while if he means that the conception is merely a

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fictitious but helpful one, he lies open to the objection that the concept of God can be of no use to science, and that it is sufficient for biology to describe features of an organism as subserving certain purposes without speculating as to the ultimate reason why they are adapted to do so. This is apparently his main objection to the work, and it leads him to take a more negative view of the results of *The Critique of Judgment* than do many commentators. He disagrees with those who regard the book as Kant's admission that philosophy could after all give us positive indications, if not real knowledge, concerning the nature of reality, as the abandonment of the rigid dualism between appearances and reality and the agnosticism as to the powers of human reason which dominated his outlook elsewhere, as the reconciliation of metaphysics and ethics, and so the culmination of his system of philosophy. "*The Critique of Judgment* is not to be taken as a 'Crowning Phase,' if this is meant to suggest anything like a pyramid ascending majestically tier by tier to an apex lost in the clouds. Kant's philosophy contains nothing like that. It just marks out bounds, and leaves it to Science, Art, and Ethics each to build what it is able on its own ground." The translator's argument, though not so clear or well expressed as his conclusion, shows great ability and power of thought, and is very valuable as curbing the extravagancies of commentators on this point, though on the other hand I think he has probably much underestimated the extent to which Kant meant to emphasize the teleological point of view. More attention should also have been paid by him to Kant's services in developing the conception of a non-mechanical causality in organisms. Quite apart from the question whether the world was created by God, there remains the further problem whether in the world as it exists all causation is mechanical in type, and in answer to this further question Kant outlines the concept of a causation which is radically different from mere mechanism, a causation in which, instead of the interaction of the parts accounting for the whole, the needs of the whole account for the action of the parts. He admits that such a mode of causation cannot be adequately grasped by the human mind, but he gives real evidence for the view that something like it is present in organisms; this question is quite independent of whether they were designed by a God or not—the latter is, after all, a question about the whole universe, and not about a particular part—and is certainly a living issue even for those who put aside as out of date the argument from Design. This aspect of the *Critique* has not indeed been totally neglected in the introduction, but it might have been made more prominent and clear.

A. C. EWING.

John McTaggart Ellis McTaggart, 1866–1925. By C. D. BROAD, LITT.D., F.B.A. From the *Proceedings of the British Academy*, vol. xiii. (London: Humphrey Milford. 1928. Pp. 30. Price 1s. 6d. net.)

"Take an eighteenth-century English Whig. Let him be a mystic. Endow him with the logical subtlety of the great schoolmen and their belief in the powers of human reason, with the business capacity of a successful lawyer, and with the lucidity of the best type of French mathematician. Inspire him (Heaven knows how) in early youth with a passion for Hegel. Then subject him to the teaching of Sidgwick and the continual influence of Moore and Russell. Set him to expound Hegel. What will be the result? Hegel himself could not have answered this question *a priori*, but the course of world history has solved it *ambulando* by producing McTaggart."—This is the 'problem' in 'individual psychology' Dr. Broad propounds, and the perfectly charming essay for the British Academy is a fascinating amplification of his

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answer. It is not surprising that Broad (himself a former pupil of McTaggart, who, in fact, declared him his most brilliant one) should have known the subject of his portrait so profoundly, both in personal and in philosophical delineation. But it *is* somewhat surprising—and agreeably so—that a thinker like Broad, whose own work and interests are so fully informed by his studies in mathematical physics and in natural science generally, should feel able to write with such admiration for the merits of a mind like McTaggart's. To say that the *Nature of Existence* "may quite fairly be compared with the *Enneads* of Plotinus, the *Ethics* of Spinoza, and the *Encyclopædia* of Hegel," that it occupies an unique position in English philosophical literature, that "it is equal in scope and originality to any of the great historical systems of European philosophy, and surpasses them all in clearness of statement and cogency of argument," suggests that McTaggart's masterpiece is of that rare quality which will secure for it a "discovery," possibly even before the present generation is wholly dead!

Of the information that Dr. Broad so delightfully imparts in this essay, some eighteen pages are devoted to McTaggart's philosophical work: the remaining ten form a character study which will vividly recall the philosopher to those who knew him, and will show well and faithfully what an attractive personality he was, to those deprived of that inestimable privilege. The philosophical writings are first discussed. McTaggart invariably re-wrote the whole MS. several times before publishing each of his books. So brief, simple, and lucid is his style, however obstruse or complex the subject treated, that Broad decides McTaggart "must plainly be ranked with Hobbes, Berkeley, and Hume among the masters of English philosophical prose." The philosophical publications fall into three groups. The first includes his three books on Hegelianism, the second, a single work, *Some Dogmas of Religion*, the only one written "for the educated amateur as distinct from the trained philosophical specialist," and the third comprising the two volumes on the *Nature of Existence*, expounding his own system of constructive metaphysics. Each group is discussed in turn. "If the style be the man, no two men could have had less in common than Hegel, with his vile technical jargon and his constant abuse of metaphor and verbal ambiguity, and McTaggart, with his short, clear, direct sentences, and his lawyer-like determination to make every clause completely 'water-tight.' If Hegel be the inspired and too often incoherent prophet of the Absolute, and if Bradley be its chivalrous knight, McTaggart is its devoted and extremely astute family solicitor." Yet Broad admits that if McTaggart's account of Hegelianism be compared with Hegel's writings as a whole, one is impressed with their profound unlikeness, even though one hastens to add that the Swabian "never meant anything so sensible or plausible as this." McTaggart was not in agreement with Hegel, but he certainly thought him to have got nearer the truth in his story about everything than any other philosopher. This power of clear exposition and his critical subtlety so long spent on Hegel led to McTaggart being himself regarded 'an Hegelian.' Many, including some who had studied philosophy at Cambridge, have slipped into the habit of so referring to him. Sometimes the "justification" for this seems to have been simply the absurdly flimsy inference that if a man comments meritoriously on Hegel he is morally certain to have bolted Hegel's conclusions in the process. For my part, I am far more conscious of the *un*-Hegelian character of the *Nature of Existence*. To say a writer is "Hegelian" presumably means either that he accepts Hegel's conclusions, or his method, or both. As to the first alternative, Broad amply shows that McTaggart was not "Hegelian." For him social institutions, Church, State, and family, "are no more to be regarded as ends than the drainage

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system or the underground railways." Again, McTaggart's two profoundest convictions were, that man is immortal, and that the love of one man for another is of infinite value and deep metaphysical significance. But Hegel was indifferent to immortality, and in his only reference to love he seems to have meant something different from what McTaggart means by it. Nor is McTaggart "Hegelian" in method. Not only is he impenitently pre-Critical, but his method, strictly deductive, is quite distinct from the triadic dialectic of Hegel. Broad says (p. 17) that McTaggart continued to hold that the dialectical method was valid, "though he wisely decided in the end to use straightforward deduction in building up his own system." This rather suggests that he continued to maintain that it was still open to him to use a dialectic of the Hegelian sort, but that he simply chose not to do so. But I fancy Broad is mistaken here. It was *not* open to him to use it because the category of Being, its 'starting' category (and all other categories, too, except that of the Absolute Idea), was only partially true of reality, but the starting-point of McTaggart's system is not a *partially* true *category*, but a *wholly* true *proposition*, *viz.* "something exists." I am almost certain McTaggart denied in his lectures that he continued to believe in the validity of an Hegelian dialectic, and this is borne out in the *Nature of Existence*, vol. i, p. 48, footnote 1. At all events the method actually employed in this work, whatever be the truth about other methods he might have supposed available, certainly does not resemble Hegel's. So if neither McTaggart's conclusions nor method are those of Hegel, it is not clear in what sense he is to be called "Hegelian."

Broad's portraiture of McTaggart as a teacher and as a man is done in the same delightful manner as his memoir several years ago in the *Trinity Magazine*, and is in every way a substantially representative sketch. Its mild humour and pointed appreciations, the one-paragraph *vignettes* on McTaggart as peripatetic, as formal lecturer, as cautious man of affairs, as Whig, his loyalties for Clifton, Trinity, and England, the unusual combination of opinions he held, his atheism, "passion for ritual," his appetite for fiction good and bad, and his love of good living—all show him to have been one of those rare spirits about whom the most trivial detail is never simply a piece of information. He would not have liked a "disciple," and probably had none, but those undergraduates on whom he exercised most influence "learnt from a master of rigid reasoning and lucid writing how important it is to detect logical fallacies and verbal ambiguities," and "how hard it is to *prove* or *disprove* anything, by seeing that most of the arguments by which great philosophers have claimed to establish or refute propositions do little more than slightly to raise or slightly to lower their probabilities. Insensibly their intellectual standards were exalted and refined until slovenly thinking and lose rhetorical writing in themselves or in others began to evoke the same reaction of disgust as dirty finger-nails or bad table-manners or a Cockney accent." It will be evident to the reader that Broad's memoir of McTaggart conveys a fresh impression of a thinker of the very first rank, and of a rich, original, and lovable personality.

S. V. KEELING.

The Essentials of Eastern Philosophy. By PRABHU DUTT SHASTRI, M.A., Ph.D., D.Sc. (New York and London: The Macmillan Company. 1928. Pp. x + 104. Price 7s.)

This volume contains two addresses delivered in the University of Toronto at a Philosophical Conference held in 1922. The author says that when he was packing up and getting ready to return to India from Canada his old teacher at the Lahore University had the idea of such a Conference at which

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his former pupil should take part. As might have been expected from the casual origin of these two addresses, the author was evidently pressed for time, both as to preparation and delivery, the more so that he undertook to do too much.

The first address, of forty pages, deals with the "Spirit of Eastern Philosophy," but is largely a criticism of the life and thought of the "West," where, he says, "the average man's ambition is a life spent in comfort and luxury, very few stopping in the midst of their money-making hustle to think as to whence came man and whither he goes." Western civilization is charged with being "soulless, unspiritual, irreligious, and artificial," and the very "deification of desire." Students are said to learn Philosophy with a view to getting a degree and not "with a desire to discover truth or to enter the higher kingdom of the Spirit." Then as regards its philosophers, the "West" is said to lose sight of the Whole, to lack the power of synthesis, to be excessively objective and rationalistic, and so forth. "Your rationalism," he says, "perhaps incapacitates you from dealing with abiding problems such as the Absolute Life Immortal, the Causality of Reason, Freedom, the Self, and so on." To Whom does the author here address himself? Apparently it is the "West," but the "West" includes many countries, and peoples displaying many types of thought, life, and religion. All are not "rationalistic" in the author's sense, or otherwise "incapacitated" to deal with these common topics of Philosophy.

There have been, and are, in the West many schools of thought, secular and religious, some of which have survived to-day from a past, when East and West had in many substantial aspects a common outlook on life. The author complains of the divorce of Western Philosophy from Religion. Can it, for instance, be said that the Catholic culture did or does so? The complaint (be it well or ill-founded) of some in this case is that "Religion" has asserted a union in which it has sought to be too predominant a partner. More sound than these indiscriminating and rapid judgments are those portions of the first Lecture which attempt to answer some common criticisms on Indian life and thought.

The second Address is an attempt to set out and to explain in sixty small pages three "heterodox" Indian systems, namely, those of the materialist Chārvakas, the Jainas, and Buddhists, as also the six so-called "Orthodox Systems" of Brahmanism. From personal experience the reviewer is well aware how difficult it is to give an accurate and succinct account of the main outlines of the Brahmanical systems only within the space of, say, a hundred pages or so. In the first place, it is dangerous to use such labels as idealism, phenomenalism, idealistic pantheism, monism, dualism, ethical spiritualism, agnosticism, mysticism, and others to which the author refers. It is best to let each Indian system speak for itself. A short description of such systems should first deal with the common concepts of Brahmanism, Buddhism, and Jainism, and then with the points upon which they diverge. On this should follow an account of the six so-called "orthodox" systems of Brahmanism. The morphology of these systems should be presented as that of a well-articulated organic whole. They are best treated in groups of two, as three stages of increasing approach to that which in *Advaita Vedānta* is the Supreme Fact. The correspondences between each of the systems should be noted, which the author has incompletely done. His exposition is both insufficient and lacking in system. What his attempt at comprehensiveness has achieved is best indicated in his own words. Summarizing his address, he says that he has given "some" exposition of the unorthodox systems, that he has put his audience and readers "in touch with" the orthodox systems,

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and that they have obtained "an idea" of the discipline taught by *Yoga*. But an exposition, however brief, should be, within its measures, complete and not partial. More, too, is wanted than to get in touch with, or to have so sketchy an idea, of these systems as the author has given. A true *Multum in Parvo* is possible only by a selection and condensation made on some definite principle of treatment dictated by the nature of the subject itself.

Without going into details as regards the whole of this Address, it should be noted that in the last chapter, from which a quotation has just been made, the author, in dealing with *Māyāvāda*, says that Creation is a "myth," though from the empirical standpoint "there is no harm" in speaking of Creation and so forth. If that be so, then the Creative Lord is also a "myth," which He is not. Rather should we say that the notion of the Lord is the highest concept which logical thinking imposes upon alogical Reality. All such thinking is the work of *Māyā*, but its concepts are not on that account "myths." *Māyā* is described by the author as "appearance," or a "kind of illusion," though he also says that it is altogether impossible to define it. This statement will leave his reader at sea. *Māyā* is a Power of God, and this is so not only in other Vedāntic systems than *Māyāvāda*, but also according to the latter, though then only pragmatically so. It is *Māyā* as it is in itself, which is indescribable according to *Māyāvāda*. The word *Brahman*, again, as such, is not existence but being (*Sat*), for existence means determined being, which is its manifestation. The term *Chit* is doubtless one for which there is no adequate equivalent in the English language, but it is less well rendered by the word "intelligence" than by some others. The author sometimes more happily states his point, and he in general commendably uses simple language.

JOHN WOODROFFE.

Introduction to Vedānta Philosophy. By PRAMATHANĀTHA MUKHYOPĀDHYĀYA. (Calcutta Book Co., Ltd. 1928. Pp. ii + 258 + xxv.)

This book contains the Lectures delivered last year in the Calcutta University by Professor P. N. Mukhyopādhyāya for the S.B. Mallik Fellowship Trust. Its subject is Vedānta in its proper sense as Upanishad as distinguished from particular interpretations of Vedānta such as Māyāvāda. The book is an "Introduction," in so far as it deals with Vedānta in its fundamentals only, forming what its author calls the "main axis" of Vedāntic thought, and indicates the lines of further inquiry. It is not an Introduction in the sense of an elementary work for beginners in philosophy, for (as the author admits) it is not easy reading. He is, however, I think, justified in his hope, that a more advanced and careful student will, as he proceeds, find any technicality as clearly explained as the scope and limits of the work permit. By the terms of the Lectureship it was required of him that he should indicate the place of Vedānta in the economy of modern Western thought, as also to estimate its value. He has accordingly done so in current scientific-philosophical terms. The task allotted to him is one for which he is singularly competent both by reason of his deep faith in the living, human value of Vedānta, as also by his capacity to give (as shown in this and previous works) the reasons of such faith in terms of Western scientific and philosophical thought with which he shows an acquaintance up to date.

The author's "axis" is concerned with the Brahman as Godhead, God and its appearance as Universe. We note a few leading points.

Brahman the "Immense" or Fact as it is in itself (*Svarūpa*) is alogical, but

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is approximately described as Being—Consciousness—Bliss. It is Being (*Sat*), because Being as such, as distinguished from Being as form, cannot be thought away. It is "Consciousness" (*Chit*), because to Be is to be Conscious. It is Bliss (*Ānanda*), because unlimited Being is Bliss. Pain is contracted Being. The Sanskrit term *Chit* here rendered by the word "Consciousness" is one, however, for which there is no English equivalent. No one has done more than Professor P. N. Mukhyopādhyāya by way of explanation of this fundamental concept. *Chit* has been rendered in default of any more appropriate word by the terms "Experience" and "Consciousness." These terms are yet inadequate, for *Chit* as such, that is as it is in itself (*Svarūpa*), is not Experience or Consciousness of anything in particular or directed Consciousness. This, however, is not the same as "no Consciousness." Consciousness "of" or directed Consciousness is the nature of the Experience, with Mind as its organ, of the limited centres or Fact-sections which exist in *Chit* as the Experience-Whole or Fact. From the point of view of non-dualist Vedānta, great service has been done to the cause of Philosophy by those Western Philosophers who have insisted on the necessity for the recognition of the fact that the supreme seat of Being and Efficiency in the universe is neither in Mind nor Matter. Experience-Whole or Fact is not correctly described when it is stated to be either mental *or* material. The author criticizes, however, the term "neutral stuff" as being also inadequate, since the Fact as expressed in the Fact-sections *is* both mental *and* material, subjective *and* objective. Subjective and objective are both actual Fact-sections, and the Fact is "neutral" only in the sense that it exceeds (but does not exclude) any of its sections or aspects. In Vedānta truth is not a representation of reality, but *is* reality, in as much as experience (*Chit*) *is* Being (*Sat*), *is* Bliss (Ānanda). The mistake of Idealism is that it first separates Experience or Consciousness from things, then attempts to reduce these in terms of their representations (ideas) in the mind, to show that things are only the "cluster" or "complex" of these representations. Matter is every whit as real as mind. The perception, again, of an object is not to be conceived as the mental representation of the actual object which is really not in perception. The perception is the object, subject to this that the apparatus of perception has made a partial section of the complete reality of the object. The mind "goes out" and becomes identified with the object, and therefore in perception mind *is* the thing, subject to the conditions of its apparatus.

Māyā, as the author rightly says, is not properly described as "illusion," but is a principle of finitization. This Principle establishes a dichotomy not of, but in, the Experience-Whole, distinguishing between Thought and Thing. In this way man's experience with its subject-object relation arises. His experience, as that of all other beings, are Fact-sections within the Fact, in itself relationless and unpartitioned. Consciousness (*Chit*) changelessly *is*: All process is in the Mind which is associated with it. The universe of Fact-sections or forms thus produced is real. "Revelation" (*Shruti*) says: "Verily All This (Universe) is Brahman." Alogically reality ceases to be the antithesis of unreality, but becomes coextensive with *all* Being, and is the same as Brahman or Fact. Logical reality exists where the polarity or antithesis of real and unreal exists in appreciation. Logical reality is a structure imbedded in an alogical mass which exceeds it. Māyāvāda Vedānta adopts as its definition of the Real that which changelessly is. This is a matter of emphasis and definition given in accordance with its ontology which is taught from the transcendent standpoint. But from the other "end" the Spiritual "Ether of *Chit*" is real, but so also are the centres generated by (what the *Mantra-Shāstra* calls) the Point (*Bindu*) of Stress, which is the Fact regarded from the point of view of movement or operation. The Whole is thus in a section and

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yet exceeds it. If the whole be defined as absolute reality, then the section must be regarded as real, though not in the sense that changeless being is real.

Then as to causation, Vedānta does not say with Kant that the "Thing in Itself" of Being-Experience is neither cause nor effect, and that it is only thought which applying its innate forms makes it appear so. The Vedānta recognizes no unknowable "Thing in Itself." Ultimate reality is indescribable, but not unknowable. It manifests as the Self than which nothing is more intimately known. That Self again is realized as the Supreme Brahman in Yoga experience. It is the Whole, which by its immanent Power (*Shakti*) and activity has evolved the centre-referred universes, and as such universes it thinks that a part of itself is cause and another part effect. The whole is not exhaustively covered by such thought-concepts as cause and effect. It exceeds the realm of Being-Experience just defined. This is not the same thing as saying that cause and effect is a subjective category only having no applicability to the "Thing in Itself." The Whole (*Pūrna*) is alogical and cannot be described either as cause or effect. In Māyāvāda the Supreme Brahman is no cause, but conceived logically as God it is the cause of all which exists. This is not to say that in Māyāvāda God is an "illusion." The Lord (Īshvara) or God is Brahman as related to the universe. It is that same Brahman which as beyond such relation is the Absolute or Godhead. The Lord's experience is that of the highest centre, that is an unveiled experience of the veiled experiences of the limited selves (Jīva). It is not *we* only who conceive the Lord as defined, that is logical Being. The undefined Whole defines itself. We as well as our perceptual-conceptual apparatus only subsist by reason of this fundamental defining operation. It is the Whole itself which remaining as it is the Whole becomes logical as the limited centres which *Māyā* as a power of the Lord produces in it. The author claims that if realism has any meaning then the doctrine which he expounds is that.

He concludes with some sound reflections upon the practical side of Vedānta, because it must never be forgotten that the Vedānta is both a philosophy and a religion with a Praxis as ritual worship (Sādhanā) and Yoga. We welcome this praiseworthy essay to make clear the chief concepts of the Vedānta, which in its varied schools offers original solutions of problems common, because human, to East and West. The doctrines of these schools are even now largely unknown or misunderstood. The author's book, then, is an enlightening contribution towards the furtherance of an understanding of Upanishad and of some of the systematized interpretations of it.

JOHN WOODROFFE.

The Use of Philosophy. Californian Addresses. By Professor J. H. MUIRHEAD. (London: George Allen and Unwin, Ltd. 1928. Pp. 208. Price 7s. 6d.)

Those who have had any contact in recent years with the University of California are well aware of the esteem and affection which Professor Muirhead has won for himself in these distant regions. This book gives us samples of the gentle wit and mature wisdom with which he has delighted audiences of different types and different interests; and while casual addresses inevitably suffer when they are reduced to the written word, it is very agreeable at times to take our thinking in small doses, and this volume may be thoroughly recommended as a pleasing example of philosophy in her less exacting mood.

The addresses naturally vary in character in accordance with the audience for which they were originally intended. Thus the first three addresses may be described as a popular plea for the value of philosophy—the first two being of a more popular character than the third. These are followed by

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three lectures which were given as part of a course in Los Angeles, and are entitled *The Spirit of Man, Social Life,* and *Religion*. These three lectures, together with the two which follow (on *The Life of Knowledge* and on *Philosophy and Politics*), are more technically philosophical than the others, but they are written in an easy and lucid style, and the lecture on the Life of Knowledge is perhaps the most attractive thing in the book. The remaining addresses are of a more general kind, one on the *British Commonwealth of Nations*, one on *Discussion in America*, and two others which are "to be taken by Scotsmen neat, by others, if at all, largely diluted."

The book is well described by Mr. Muirhead himself as an "attempt to state in outline on the subjects discussed the general conclusions which I have myself reached during a fairly long life devoted to little else." Its general tone is happily free from the spirit of controversy, although there are interesting incidental criticisms of such writers as Gentile, Royce, and Santayana. The character of the book precludes the possibility of elaborate exposition or argument, but there is a freshness about it all which succeeds in avoiding the appearance of dogmatism. Its doctrine is in the idealist tradition of this country. The main concern of its author is with the social and religious life of man, and with devotion to truth, especially to the truth of philosophy. Throughout there is an insistence on the necessity of the synoptic vision, on the vital importance of the Whole, and on the essential place of value in that Whole.

Mr. Muirhead speaks of the Oxford idealism of the seventies as "just *the weld between the ideal and the real.*" The same phrase might be applied to the main view which he is seeking to express. The unsympathetic critic might be tempted to regard it as falling into a too easy optimism, but it is impossible within a narrow compass to do justice to all sides of reality, and it is interesting to find at least one philosopher who has lived and thought through these difficult and tragic times, and yet retains an undimmed confidence alike in the value of human endeavour and in the ultimate goodness of the universe.

The language used on page 15 suggests that Mr. Muirhead believes Bacon to have written the works usually attributed to Shakespeare. This may be presumed to be a slip in writing. There is another slip on the "jacket" of the book, where the year of Mr. Muirhead's birth is given as 1885—a date too recent as a statement of prosaic fact, and very much too remote if taken as a mark of the youthfulness of Mr. Muirhead's spirit.

H. J. Paton.

The Pragmatic Revolt in Politics. By W. Y. Elliott, D.Phil. (New York and London: The Macmillan Company. 1928. Pp. xvii + 540. Price 16s.)

In stating in his Preface that his aim is "simply to run a thread of unity through the chief modern theories and experiments which are in revolt against political rationalism," Mr. Elliott unduly disparages the nature of his contribution. For, though by far the larger part of his book is devoted to a critical examination of the movements and leaders of this pragmatic revolt, Mr. Elliott's linguistic and substantial proposals for a rational restatement of liberal constitutionalism is deserving of close attention. Unfortunately, the thickets of controversy in which it is entangled present unusual difficulties to the reader, who is more interested to know exactly what Mr. Elliott thinks and believes himself than what he thinks about the thinking of Mr. Dewey, M. Duquit, Mr. Laski, Mr. Cole, and other thinkers whose writings he subjects to close and repeated criticism. It

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might have been more profitable to treat the tendencies or currents of thought, represented in the writings of these men, without so much ransacking of the documents. For, as eventually emerges from this meticulous investigation, every one of these writers hedges against what would seem to be plain implications of his main doctrines, or else so modifies those doctrines as to make them barely recognizable in their original shapes.

It is, however, indisputable that there are certain common features in the modern field of political thought and action in which the influence of the pragmatic philosophy is plainly discernible. In the current experiments of Fascism and Bolshevism, as in the projects of syndicalism, guild socialism, and other forms of political pluralism, there is a common temper, which perhaps deserves to be called realism, but which Mr. Elliott terms anti-intellectualism. If reasoning discerns limits to the control and efficacy of reason as a governing factor in social life, it is at least an open question whether such doctrine is anti-intellectual. The two main positions of pragmatism, the repudiation of the concept of the block universe, and the efficiency or 'working' test for truth, can certainly be stated so as to relieve them from liability to the charge either of anti-intellectualism or irrationalism. Mr. Elliott himself accepts the failure of a rationalism ending in a barren 'absolute,' while in his concluding chapter he adopts in its best form the pragmatic test for his 'co-organic theory.'

But to make this intelligible it is best to disentangle Mr. Elliott's theory from the dialectics of this controversy, and to present it in a positive setting. Finding himself in a world where intellectual forces array themselves in battle to give support, either to an omni-competent absolute State, owning power as its ultimate sanction, or to a plurality of social organizations with differing, and often conflicting claims to loyalty and obedience from their individual constituents, Mr. Elliott seeks mental support for a moderate or middle position, which shall not be a mere compromise, but a just harmony. His concentration upon the defects of pluralism in all its political applications is largely attributable to the fact that the old philosophic position of State absolutism is already lost, and that the swing in doctrine and practice to the opposite extreme is the present danger—dangerous in its direct results as a breach of social solidarity, and indirectly in its backstroke of tyranny, as in Italy and Russia.

How far the active causation in the new roads of policy can be imputed to the thinking processes of theorists and idealists, or how far such thinking is adopted as intellectual camouflage by political realists, is an open question. But that thought is among the realities that have potency in shaping events is indisputable, and is ample warrant for Mr. Elliott's attempt to reset with some novelty of thought and terminology the essential issues at stake

These issues are structurally two. First, the nature of the social groups, political, economic, religious, cultural, and other, in which persons co-operate; secondly, the relations of these groups towards one another, and in particular towards the principal political grouping, the State. Mr. Elliott's position rests upon the fundamental distinction he draws between the organic and the purposive elements of association. It is in essence the old accepted distinction between a biological evolutionary process, deterministic, unconscious, and protective (for survival) in its urge and operation, and the conscious ethical expansion of a self-liberating and self-expressing personality, utilizing, creating, and adapting various modes of association for this end of a 'good life.' The acceptance of this dichotomy has, of course, its difficulties, chief among which are its denial of any effective consciousness to the conduct of sub-human organisms, and the emergence at some era in human evolution

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of a self-consciousness with a novel power to determine and direct its conduct of life. Though the modern conception of creative evolution may account for the novelty of this conscious self-direction, this very act of creation is itself to be envisaged as within the orderly activity of the wider 'urge' or 'purpose' to which some thinkers would accredit a cosmic consciousness. Though Mr. Elliott does not feel bound to open up the question of this wider purposiveness in Nature, the exceedingly sharp distinctiveness he craves for human personality as an instrument for free self-direction will raise doubts in some of his readers whether he is not severing the problem of political philosophy too completely from the broader issue.

The uniqueness of the unity of the conscious self-directing mind and the fuller moral personality which is its end or purpose are the starting-points for Mr. Elliott's account of political and other social groupings. They enable him to affirm with confidence that an association or group by which persons voluntarily co-operate for some common purpose is not an 'organism,' though the adjective 'organic' be sometimes applied to its structure, is not, save in a purely juristic sense, a 'person,' and does not possess a 'mind.'

In order to mark the distinctive character of groups or associations he coins the term co-organism—a co-operation of organisms. "The phenomenon of group-life is, then, co-organic, not organic. There is not born from it a conscious self, a super-person, for its 'will' is dependent on the wills of the associated individuals, its members; is has no good apart from their good; it is only because it affords the means of realizing their goods in a particular direction common to the individuals composing it that it exists at all" (p. 381). It may, of course, be urged that the full validity of this criticism of a 'group mind' hinges upon the direction of its activities 'in a particular direction,' *i.e.* a business corporation has not a mind in that only a fragment of the mentality of its constituent members is engaged therein. If the whole of these individual minds were brought into the co-operation, all their activities directed to the common purpose, such an *esprit de corps* certainly comes nearer to the concept of a mind with a will that is not merely the pooling of individual wills. An army in the field, even a nation at war, comes near the realization of a purpose which is more organic than co-organic. If there were collective and individual consciousness in the intricately personal co-operation of a hive or anthill, or the herd-life of some animals and primitive men, it would not be easy to refuse the recognition of collective mentality, or to speak of such a group as merely co-organic. I do not urge such criticism as decisive against the adoption of such a term. For it is clear that such co-operative or corporate thought, feeling and will, as are expressed in group-life, differ in character from those expressed in personal life, and need some special terminology. But when Mr. Elliott insists so strongly upon "the recognition of normative consciousness, uniquely human and moral, capable of co-organic purpose," I am a little disposed to boggle at the intensity of this moral individualism. Of course, Mr. Elliott admits that the experience of group co-operation affects the individual personalities, but the initiative is always envisaged as theirs. There is no recognition of the idea that Nature may have ends or purposes promoted through such group activities, or, if the idea is entertained, it is relegated to a biology from which ethical conceptions of purpose are excluded.

A large part of Mr. Elliott's work is devoted to discussing the place of the State in relation to other narrower or more specific groups. Here he is in firm protest alike against the pluralism, of which syndicalism is the extreme example, and the new absolutism of the Fascist State. He sees

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in both alike a pragmatic a-moralism, which in practice relies on fear and force as its 'justification.' The 'down' upon democratic self-government, which is so prevalent to-day, he rejects as hasty, shortsighted, and unwarranted by history. The evolution of group-life, as he sees it, is one which relies upon personal responsible initiative, and a free recognition of and assent to expert advice and control. In politics this means the survival and progressive improvement of representative government. The State, while itself a Co-organism, is not merely one among many groups. Its objects and activities are both larger and more fundamental than those of other groups. Indeed, group-life in general testifies to a recognition of this position. For "the very existence of the State is conditioned by the extent to which the need for political organization is created by the problems arising out of the conflict of these group 'wills,' many of which are so real, co-organically, and so vital to the members, that a clash means bloodshed. The State is the condition of peaceful intercourse in society, and the willingness of a community to submit even to the rule of Fascism rather than be exposed to the feudalism of a weak State is evidence of the recognition of this fact" (p. 390). Thus the State must in the last resort be the sole repository of force in order to guarantee social order. "From the serious abuse of this force, the ultimate appeals must lie in extra-legal sanctions, in the answerability of Government to the constitutionally organized and politically effective public opinion to which it is ultimately responsible, in the last resort to revolution" (p. 391).

In some exceedingly interesting passages Mr. Elliott discusses the reality and improvement of this final sanction, public opinion, deprecating the shower of disparagement to which it has recently been subjected by Mr. Lippman and other critics.

A more personal discussion of the relation of group co-organisms to one another, as well as to the dominant group, the State, and a clearer account of the federal connection of the co-organic groups in some general social ordering (a co-co organism?), would, I think, have strengthened Mr. Elliott's positive contribution. The work, however, is of high ability and exhibits brilliant literary skill.

J. A. HOBSON.

Sibyls and Seers, A Survey of Some Ancient Theories of Revelation and Inspiration. By EDWYN BEVAN. (London: George Allen & Unwin, Ltd. 1928. Pp. 189. Price 7s. 6d.)

This volume, consisting of six lectures given in Oxford, has a twofold interest. For the scholar there is a mass of varied valuable material, derived from many sources, especially the classical, in which the author is recognized as a master. For the thinker there is his discussion of the significance of this material as bearing on the question of communication with the unseen world, the spiritual world, divine, demonic, or human. In the first lecture the author discusses the *Belief in a Spirit World*, and concludes that delusive as may have been many of the ideas of the ancient world, it is not to be dismissed as unreasonable. There is discernible in the world a causality which to science remains a mystery. In examining the evidences of the belief, "it will be well to avoid any note of satisfied superiority, remembering our own ignorance" (p. 40).

In the second lecture, *Travellers beyond the Bourne*, he describes the various ways in which the ancients thought that such knowledge could be obtained. "First of all it might be obtained if someone belonging to this world went to

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the other world and came back to tell his experience; or, secondly, it might be obtained if someone belonging to the other world came into this world to give a revelation; or, thirdly, beings in the other world, without actually coming into this one, might send messages" (p. 42). After reviewing the evidence, and admitting some doubtful cases, his conclusion is "that, with the solitary exception of St. Paul, there is no single instance given us of a man visiting the spirit-world which is not either mythological or literary fiction" (p. 62). He holds, however, that it is "certain that the idea of a man visiting the spirit-world *is* based on real experiences of a particular kind" (*ibid*). Examining a contemporary instance—the Sadhu Sundar Singh—he maintains that, while the experience has value for the experient, it leaves nothing "which can properly be called *knowledge*" (p. 64) communicable to others. This is true also of St. Paul.

"The coming of a denizen of the spirit-world into this" is presented in two forms, epiphanies, appearances of a god or ghosts. With this subject the third lecture is concerned. The epiphanies were either spontaneous, or induced by magic. "Whilst we find in antiquity this widespread belief in appearances of the gods, we rarely, I think, find that any body of belief regarding the spirit-world is alleged to have come to men in this way" (p. 78). "The Biblical appearances of God and of angels are connected to a greater extent than the Greek epiphanies with the giving of instruction" (p. 85); but, until we come to the Apocalypse, this instruction was concerned with conduct in this life, and not the conditions of the unseen world, in which ancient Hebrew thought displays no interest; and in the Apocalypse no new knowledge is offered to us. In "ancient belief there is no real parallel to the conception embodied in" John iii. 11–13, "that the Divine Being has descended from heaven with the power to declare heavenly things from direct knowledge" (pp. 87–88). *Passim* it may be doubted whether this passage can be taken as an authentic saying of Jesus, and whether, taken literally, it helps us at all in framing our Christology. To resume, however, the course of the author's argument, this resort "all through antiquity for information to the spirits of the dead" (p. 93) differs from modern spiritualism in method—such as séances, tappings —and purpose, for what was sought was not knowledge of the future life, but guidance for the present. "One thing," says the author, "which these stories make plain, when we compare them with the teachings attributed to departed spirits in our own time, is that, whether there is or is not a nucleus of reality in such communications, they largely take their shape from the ideas already in the minds of the recipients" (p. 98).

In the fourth lecture the author passes to the third mode of communication from the unseen world; and this might take the form of "words in a voice audible to men here, a voice from heaven," or "in writing, a letter from heaven," or "according to a system of signals in natural object," or in "the minds or tongues of men moved by divine (or dæmonic) power" (p. 99). In the Hebrew conception "the voice from heaven became, not a sound carried through space, but the speaking of Spirit to spirit within a man's heart" (p. 102). And "from Hebrew religion the same strain runs on with fresh developments in Christian mysticism" (p. 103), *e.g.*, "actual conversations are recorded between the mystic and Christ." The voice which came to Jesus at His Baptism is not to be regarded as an instance of the Rabbinic *bath-qol*, which "was not the voice of God, but the *daughter* of the voice; that is, a kind of reflection or echo of the voice of God, which lacked the authority of God's authentic utterance" (p. 106). An instance of the message in writing is found in the Egyptian *Book of the Dead*; another is "the two tables of the Law" in the Old Testament. The Greeks knew neither voice nor writing from

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the unseen. In the first Christian centuries the belief in such heavenly writings was current, *e.g.*, "the sacred book of the Christian sect of the Elkasaites was believed to have come down from heaven" (p. 115). The same idea meets us in other religions.

The fifth lecture, entitled *The God in the Breast* deals with ancient theories of inspiration, but the treatment of signs and omens is passed over. Cicero's *De Divinatione*, distinguishes between divination by material signs and divination by inspiration, as *by art* and *by nature*. While the ancient sceptics rejected both, the Peripatetics rejected the first, and only criticized the practical use of the second. While spiritualists believe in the reality of communications from the unseen world, "all Christians must believe in the possibility of thoughts, feelings, volitions arising in people through the action of a spiritual Power 'not ourselves'" (p. 134). Inspiration, according to the ancient theory, took various forms, the utterance was due to "the soul of the ecstatic raised to abnormal powers of clairvoyances," or to an invasion of the soul of the ecstatic by a wholly different personality, or there might be a combination of both. The second alternative has a basis in "real experiences of multiple personality" (p. 135). These conditions of "possession" cannot be dismissed simply as morbid, although much in them can be so explained. "For one has at once to take account of the fact that a feeling of 'otherness' in some ways similar to the feeling first described marks some of these states which believers in a spiritual world would strongly deny to be morbid, and assert, on the contrary, to represent the higher reaches of the human spirit" (p. 144). Plato connected "the divine rapture" with "the logical intellectual process," as both its foundation and crown (pp. 147-148).

The last lecture returns to the first of the explanations, and deals with *Ecstasy and Dream*. The view of direct communication with the divine in ecstasy or dream was later modified in a theory of the mediation by demons, and this theory with modifications was taken over by the Christian Church. "The pagan philosophical tradition regarding oracular possessions went to form the conceptions of Christians regarding inspiration by God" (p. 166), Philo preparing the way. He reduced the human agency to the minimum and raised the divine activity to the maximum; and yet he required as a condition of inspiration that "the mind of the prophet should have reached the pinnacle of virtue" (p. 169). This view dominated in the early centuries, although, in opposition to Montanism, suspicion was cast on "the condition of ecstasy" (p. 175). Plutarch expounds "a theory of oracular inspiration which leaves a considerable part to the human mind" (p. 176), but "some of the Neoplatonists reduced the part of the human mind to almost nothing" (p. 177). Against the reproach that in the decline of Greek civilization "a craving for supernatural revelation, and a belief in what claimed to be that, took the place of the sane rationalism of the great days of Greece" (p. 178), the author argues that the difference is due to a greater interest in what lay beyond in the later age; and in closing he poses the problem: "We may no doubt point to inferior mentality in these later Greeks in the respect of their credulity, their lack of criticism, their readiness to accept as real revelations a mass of things which claimed to be revelations. But it would be unfair to stamp them as inferior simply because they believed reason to be inadequate for giving them the knowledge they desired." Was their interest in the things beyond a morbid fancy, or a quest of truth, even if by devious ways? That depends on our view of the universe and our relation to it. "According as we answer the great questions of the universe ourselves, we shall regard these ancient men as ridden with useless fancies, or groping confusedly after something supremely true" (pp. 181–182). As an historical scholar the author

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does not solve the problem, but the tone throughout the book indicates that for him these gropings were not mere delusions straying into error, but rather illusions, inadequate apprehensions of reality.

This review has been confined to an indication of the course of the argument, the matters which concern the student of human thought; it has been impossible to give an indication of the abounding learning shown in the illustrations from religion and philosophy. The book is written with admirable lucidity; the interest is sustained throughout; the lectures are a valuable contribution on a great theme—man's search for the Beyond.

A. E. GARVIE.

A History of Modern Philosophy. By HORATIO W. DRESSER, Ph.D. (London: Geo. Allen & Unwin, Ltd. 1928. Pp. xiv + 471. Price 15s. net.)

In this volume there is offered a narrative of the entire history of modern European (and American) philosophy from Baron Verulam to Dr. Whitehead. The narrative is connected, well told, and (as is obvious) reasonably compact.

The author's task was difficult. Since the book must be regarded as (in part) a work of reference, it was essential to include all names of any importance. The danger here is for the narrative to lapse into a catalogue, more or less annotated. It was also essential to give a judicious, informative, and critical account of the greater philosophers during the period; and unless such accounts are compilations from accredited authorities (in which case they are apt to be lifeless), it is, humanly speaking, scarcely possible for any writer to maintain a high or even an equal level in the exposition of so many radically different systems of thought. In the third place, a certain unity in the narrative is desirable; and this is difficult to obtain, partly because cross-divisions can hardly be avoided (*e.g.* divisions of theme and subject-matter, or again of geography and nationality, or of a chronological kind in "Back to Kant" movements and the like), but principally because the unity is apt to be imported into the narrative, particular philosophies being forced into particular slots in the narrator's machine, irrespective of their professed intentions.

On the whole, I think, Mr. Dresser is to be congratulated with some warmth on his success in this difficult enterprise. He has omitted no one of the least importance, and has contrived to say something effective, although brief, about (say) Jacobi, De Biran, Renouvier, and other minor but still considerable authors. Towards the close of his book, it is true (when time has not conspired with historians in exalting the peaks and depressing the hillocks), his work shows obvious signs of being rushed, and *is* rather like a catalogue, especially, oddly enough, in the chapter on American philosophy (the portions dealing with James and Royce always excepted).

Again, his account of the major philosophers is usually good, and sometimes (I think) very good. His expositions of Kant and of Hegel seem the best (although they tend to be expressed rather too technically for those who are not adepts). The weakest, I think, is his account of Hume. From the statements made, it is hard to see how any one could have thought Hume a great philosopher. And the cardinal point that the idea of necessary connexion is derived from an "impression of reflexion" is not explicitly mentioned. Yet it is correct, on the whole, to lay stress, as this author does, principally upon Hume's "naturalism" and "phenomenalism." A readable and sympathetic account of Berkeley, again, is marred by the common and serious error of saying that Berkeley maintained that "to exist is to be perceived." (What Berkeley said was that the "esse" of *ideas* consists in *their* "percipi.")

It is also to be noted that the author shows real interest in ethical and

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social philosophy, treating these not as an addendum to his theme, but as an integral part of it.

He endeavours, moreover, with considerable success to avoid obtruding his own point of view, and yet to convey the impression that there has been a determinate march of philosophical ideas during the long period which he treats.

Indeed, if it were not for his hustle at the end, it would be ungracious to qualify one's admiration for this author's competence. Very likely he thought the new realism of no importance; and very likely he was right. But the account he gives of it is (so far as I am able to judge) so remote from the reality, that one is inclined to wonder whether all of his earlier expositions can really be as good as they seem. To be sure, the affair is redeemed in part by an honest and fairly full attempt to expound Mr. Alexander's views. The rest, however, of this part of the story is lamentably poor, and is not helped by the casual borrowing of an amazing argument of Mr. Joad's; or by a refutation of Mr. Russell in a single adverse opinion of Mr. J. E. Turner's.

The bibliographies attached to each section are useful. A serious omission is that of Mr. Gibson's *Locke's Theory of Knowledge*; or, again, of M. Léon's *Fichte et son Temps*; and of Mr. Ormaston's translation of Hegel's *Æsthetik*.

JOHN LAIRD.

Present-Day Thinkers and the New Scholasticism—An International Symposium. Edited and augmented by JOHN S. ZYBURA, Ph.D. (St. Louis, U.S.A., and London: B. Herder Book Co. 1926. Pp. xviii + 543. Price 12s.)

Probably to no one, save to an American, would it have occurred to compile a book such as this; yet the effect is not unpleasing, nor yet uninteresting. Nineteen professors from American and fourteen from British and Canadian universities state in letters addressed to the editor their opinion of Scholastic Philosophy and of the causes which account for the indifference of the majority in its regard. The editor summarizes results and draws his own conclusions. Then follows a series of ten articles by well-known writers on Scholasticism, such as Grabmann, Jacques Maritain, Noël, Jansen, Olgiati, and James H. Ryan. Finally the editor sums up again at greater length. An imposing statement of opinion alike as to what Scholasticism is, as to what it ought to be, and as to why people care so little about it.

Professor Dewey's letter sums up more concisely perhaps than any other "the chief causes for indifference rather than positive unfriendliness": the Protestant tradition in which non-scholastic thinkers have been brought up, the decay of acute interest, if not actual belief, in the content of Christian revelation, the empirical—or alternatively the mathematical—trend of modern thought, the development of natural science, with which Scholasticism scarce seems to be in harmony, the rise of new social and political problems upon which Scholasticism does not appear to throw light. Interest to-day, as Professor Clement Webb points out, is centred in the history of mediæval thought rather than in what purports to be a new Scholasticism, adapted to the age in which we live. A *rapprochement* is not impossible, he suggests, but first Scholastic thinkers must "remove the impression that they are maintaining Scholasticism as a philosophy less from independent conviction of its superiority than in obedience to ecclesiastical authority. *Quidquid recipitur secundum modum recipientis recipitur* is a dictum which, as Professor Grabmann remarks, holds true not only of individuals but of entire epochs.

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Of those who in various countries have contributed towards the revitalizing of a philosophy which the world has long deemed dead, scarce any passes unnoticed in these pages, unless indeed they live in England, about which, in spite of Dr. Vance and the *Stonyhurst Series*, little is said. Dr. Grabmann gives us an excellent account of what has been and is being done from the historical standpoint, at the same time that he points out how important this work is if we would rightly discern what is and what is not of the essence of Scholastic thought. In discussing the criticisms of Scholastic philosophy, the late Paul Gèny admits that the critical problem raised by Kant has scarce been adequately faced by Scholastic writers—a gap that has since been filled by the publication of Père Maréchal's voluminous fifth cahier on *Le Point de Départ de la Métaphysique*. The work that has been done at Louvain and in French-speaking countries generally, since Cardinal Mercier gave the first impetus to the neo-scholastic movement, is fully described by Professor Noël, while of the corresponding revival in Germany an account is given by Dr. Bernhard Jansen. In Germany, too, "side by side with the predominant Thomism, there has been a successful and fruitful revival of Augustinianism," as exemplified in Bonaventure, Roger Bacon, Scotus, and others, for in that country those "narrow, intolerant tendencies which on the whole would like to base our times on the thirteenth century" could not thrive. The movement in Italy, described by Professor Olgiati, had as its organizer Agostino Gemelli, a convert from Positivism, and as one of its leaders, Professor Mario Casotti, a former pupil of Gentili. Its aim is "to synthesize into one organic whole the immortal truths of pre-modern thinkers with the contributions (scientific and philosophical) made by modern times."

The three remaining articles are all by Americans. Professor Millar of Fordham University discusses the bearing of Scholastic principles on political philosophy, as expounded by American thinkers. Professor Ryan of Washington discusses their bearing on modern thought in general and on biology in particular. Then in Part III Dr. Zybura, reviewing the previous discussions, seeks to show that the decline of Scholasticism is attributable not to some flaw in the system itself, but to causes extraneous to its essence and spirit. He concludes with a passage cited from Agostino Gemelli: "By the very exigencies of cultural development, the Thomistic synthesis inevitably had to be followed by a new analysis, which, in its turn, aims at a more perfect synthesis; this latter will not run counter to the former synthesis, but will be that same one, amplified, enriched, and embellished." It is this spirit that characterizes the whole book.

LESLIE J. WALKER.

Phenomenology as a Method and as a Philosophical Discipline. By MARVIN FARBER, Ph.D. (University of Buffalo Studies. Monographs in Philosophy, No. 1. Buffalo, U.S.A. 1928. Pp. viii + 130.)

The so-called school of "Phenomenology" is perhaps the most influential in contemporary German philosophy, and a good account of it which would "place" the Phenomenology movement in relation to other currents of thought in a way to be understood by the general reader interested in philosophy would be very welcome. Such an interpretation, however, has to encounter, among other difficulties, the obscurity in which the writers of this school invest their thought. From Edmund Husserl himself, its acknowledged and honoured leader, to Martin Heidegger, reputed the most brilliant of its younger exponents, they are busily engaged in recasting and amplifying their terminology, and many of their countrymen do not pretend to find it easy to follow their mean-

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ing. All the more hard is it to render it intelligible in English, where the technical philosophical vocabulary is by comparison much less ample.

Dr. Marvin Farber's monograph on *Phenomenology as a Method and as a Philosophical Discipline* (the first of the monographs in Philosophy of the University of Buffalo) cannot be recommended as an exposition of the teaching of this school. It is only fair to say that the author is clearly not writing for the general reader—if only because he is so lavish with untranslated quotations. But this said, it remains a puzzle what purpose he had in mind in compiling the hundred and thirty pages of his dissertation. It is expository rather than critical, but it does not really succeed in expounding. That the author has read widely is clear; it is not so clear that he has a single coherent view of the bearings of all he has read, though it would be impertinent to suggest the contrary. And it is still less evident that he has any gift of explanation and exposition. The reader is compelled to shove his way through a veritable turmoil of allusions and quotations, summaries, retrospects, parallels, and an unelucidated jargon of terms, amid which tantalizing glimpses of the thought of Husserl (with which the monograph is professedly almost entirely concerned) appear every now and then in the plunging *mêlée*. There is seldom so clear a pronouncement as that (p. 10):—

> "Husserl inclines to rationalism as opposed to faith, authority, etc., to absolutism as opposed to scepticism; to intellectualism rather than mysticism and romanticism; to rationalism as opposed to empiricism, etc."

But the reader of this monograph will certainly carry away one or two true impressions of the Phenomenologist School; as, that it is a sincere and notable reaction against the flimsy half-thinking that never comes to grips with its object; and not least against the tendency known in Germany as "Psychologism," which would virtually subordinate logic and epistemology entirely to psychology.

J. W. HARVEY.

Emotions of Normal People. By WILLIAM MOULTON MARSTON. (London: Kegan Paul, Trench, Trübner & Co., Ltd. 1928. Pp. xiii+405. Price 18s. net.)

The theory of emotion developed in this volume of the International Library of Psychology, Philosophy, and Scientific Method is the outcome not only of Dr. Marston's well-known researches upon 'deception' (systolic blood-pressure, reaction-time tests, etc.), but also of his clinical observations of normal child and adult behaviour, as well as of the study of a large number of criminal subjects in the State penitentiaries of Texas.

His original 'deception' tests had already provided the author with a considerable mass of data in respect of physiological measures of emotion; but these data, he found, were not amenable to scientific interpretation without some hypothesis as to the psycho-neural mechanisms concerned in them. The terms commonly in use to denote emotional states, he felt, were inadequate and thoroughly misleading, and the introspective descriptions of the states themselves entirely useless as a basis for theory. Dr. Marston had found indications of antagonistic emotional influences of behaviour in his original tests, and these could not merely be lumped together under one or other of the accepted "literary, pseudo-psychological, or psychological" terms in general use. The objective analysis of behaviour, on the other hand, promised to reveal its "common factors and least common denominators." According

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to Marston this analysis led to a classification of emotions under four primary heads, at first termed by him 'acquisitiveness,' 'dominance,' 'creation,' and 'submission.' Later, and by further analysis, these heads became 'dominance,' 'compliance.' submission,' and 'inducement'; combinations of which give rise to compound emotions such as 'desire,' 'satisfaction,' 'passion,' and 'captivation.' From Chapter VII onwards these emotions are considered from the point of view of their behaviour-effects in human beings and other animals, and an ingenious set of parallels with the "behaviour forces of Nature" is drawn in the chapters treating of each, on the lines of the interaction (facilitation and relative modification of the forces in question) which the author takes as the basis of his theory of emotion.

This theory is developed at length in the preceding chapters of his book.

Setting out from a survey of the unfortunate variety of doctrines and methods of the principal groups of thinkers who claim the sole right of terming themselves psychologists, Marston asks the question, "In what terms, then, can we describe simple, normal emotions, with any expectation that one or all of psychology's warring factions may regard our terminology with aught but disdain?" He answers this question in a chapter on "Materialism, Vitalism, and Psychology," in which, reviewing the principal schools in the field, he concludes that "Psychology of Emotion is the scientific description of affective consciousness," and that scientific description "must include discovery and exposition of both mechanistic-type and vitalistic-type causes and their interactions within the field defined." Thus mechanistic-type causes (environmental stimuli mediated by nerve impulses) may induce emotion; whereas, on the other hand, bodily expression of emotional consciousness may be induced by the vitalistic-type of cause which is exemplified in conscious energy itself. The doctrine, so far, seems to give promise of harmonizing efficient and teleological causality, at least in part; but this and the next chapters show that causation of the vitalist-type is conceived merely as relatively "more intricate assemblages of force," which, "by virtue of new attributes derived from their complexity, . . . compel compliance from cruder types of matter, and do, under our very eyes, completely regulate the simpler energy forms." What, then, from the objective point of view, is this vitalist-type force which is consciousness? It is to be assumed "that consciousness itself, or the physical mechanism used to produce it, constitutes a definite, physical force, capable of registering its presence and nature by causing changes in some observable material." Marston proposes ten objective criteria, or proofs, of consciousness, corresponding to introspective reports as to its occurrence or intensity. "These ten behaviour variances," he writes, "may be shown to appear in human behaviour *pari passu* with the reported appearance of consciousness." The cause of these variations is therefore consciousness, and it is a form of energy.

But there are serious reasons for refusing to believe that this energy is neuronic. The function of the neurone is conduction, not consciousness. Marston goes on, accordingly, to identify the first ten phenomena mentioned by Sherrington as characteristic of synaptic influence upon nerve conduction with his own ten criteria of consciousness, and he bases his "psychonic theory" upon this identification. "The totality of energy generated within the junctional tissue between any two neurones, whenever the junctional membrane is continuously energized, from the emissive pole of one adjacent cell to the receptive pole of the next, intrinsically constitutes consciousness." He proposes to call the structural synaptic unit a "psychon," and suggests that "the principal function of the psychon is consciousness."

To be sure, this is not an altogether new dcotrine; nor, indeed, is the further

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application of the psychonic theory to the explanation of other conscious events. As synaptic structures exist in the afferent nerve tracts, so also they exist in the efferent ones. Marston brings forward considerations to show that, as psychons in the afferent tracts may be identified with sensory consciousness, so psychons in the efferent tracts should be identified with consciousness also. But with what sort of consciousness? Not, clearly, with the 'sense of innervation.' That had already been suggested as introspectible, had met with much criticism, and finally had generally been rejected. Marston —and herein lies the chief novelty of his view—identifies it with affective consciousness. He gives a (hypothetical) *schema* of a "complete psycho-neural description" of the train of events from external stimulus to final reaction, which summarizes his view of mechanical and vitalist causation, and at the same time introduces his concept of the motor psychon, as follows:—

"1. Mechanistic-type causes—
- (*a*) environmental stimulus, causing
- (*b*) afferent, sensory, nerve impulse, causing
- (*c*) sensations, *i.e.* psychonic impulses in sensory centres, causing

"2. Vitalistic-type causes—
- (*d*) thoughts, *i.e.* psychonic impulses in connector centres, causing
- (*e*) motations, *i.e.* psychonic impulses in motor centres, causing
- (*f*) efferent, motor, nerve impulses, causing
- (*g*) bodily behaviour."

This is not unlike the *schema* of Wundt.

It will be noticed that the emotional cause (*e*), which, through efferent nerve impulses, issues in behaviour, is termed "motation." Marston tells us that this term is synonomous with "motor consciousness" and "affective consciousness." Apart from any criticism of the psychonic theory as a whole, this particular aspect of it (viz., that motor consciousness *is* emotion in the sense of affective process) is interesting, but neither wholly novel nor wholly convincing. Motation is a term of conative, rather than affective, connotation; and recent experimental work has shown that conative consciousness, as distinct from kinæsthetic and cœnæsthetic sensations, is introspectible. This consciousness may be pleasurably or unpleasurably toned; but it seems in essence to be distinguishable from pleasantness and unpleasantness. Indeed, the common view that the hedonic qualities are characters of its free or impeded development finds support from the data of the recent work in question.

Marston does not distinguish a conative consciousness as such. He claims that motor consciousness is synonomous with affection. Nevertheless, the further development of his theory works out to much the same effect as the older doctrine. His chapters on the Integrative Principles of Primary Feelings and Emotions depend upon the view that he takes as to the relations of the "Motor Self" ("continuous, tonic, motor discharge across motor psyhons; psychonic impulses of tonic motor origin") and "Motor Stimuli" ("phasic motor impulses at motor psychons; psychonic motor impulses of phasic reflex origin"). These are related as antagonistic or facilitative, and also as mutually regulating the intensities of each other, in such a way that it would be easy to state the emotional doctrine of the author in the more usual and more familiar terms. Indeed, Marston's chapters on the Primary Emotions really develop the affective aspect of consciousness precisely in this way. The physiological implications of the relations between the "Motor Self" and "Motor Stimuli" are exceedingly interesting and minutely worked out; but the feeling remains that a more radical experimental analysis of conation and affection is still needed.

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There are additional chapters at the end of the volume on Love, Love Mechanisms, Creation, Abnormal Emotions, and Emotional Re-education. An excellent feature of "Emotions of Normal People" consists of the synopses at the end, and sometimes in the text, of the more important chapters. These help to fix the reader's thought upon the more salient items which otherwise would sometimes tend to become obscured by the very detailed treatment and the wealth of illustration given by the author.

F. AVELING.

The New Morality. By DURANT DRAKE. (New York and London: The Macmillan Company. 1928. Pp. xii + 359. Price 10s. 6d.

According to this author—who is, of course, well known for his work in several fields of philosophy—the "old" (and objectionable) morality is "the prudish morals of Puritanism" superstitiously allied with *taboo* and Fundamentalism. The "new" morality is defined in a way quite indistinguishable from Utilitarianism (chap. iii), and is supported by arguments more venerable than any I remember encountering in a contemporary author.

In a book designed for "laymen" it is not to be expected that there should be much astute or prolonged thinking upon points of general theory. Even a layman, however (I should imagine), must sometimes wonder whether many of the arguments this author permits himself to employ are contained in, or even consistent with, his Utilitarianism. "The community," we are told (p. 67), "which has done so much for the individual, *deserves* in return his fullest service." Again (p. 70), a "universal obligation to work" is laid down; and luxury is condemned again and again in ways that seem puritanical. So far as I can see, no attempt is made to define or explain the important conceptions of "desert" or "obligation" in conformity with Utilitarian theory. And Mr. Drake must know, as well as the rest of us, that there really are serious difficulties in the case.

The author never makes up his mind whether the happiness (*a*) of all sentient creatures or (*b*) the happiness of humanity is the ethical end, and apparently does not see that the two are different and possibly conflicting. In the species of state socialism which he appears to advocate he never fairly faces the problem whether, on the whole, greater happiness is likely to accrue from governmental organization of the community in all important matters or from private enterprise in many of them. And although he usually insists that America's duty to humanity ought to be the paramount consideration in all her policy, he also maintains that "the only really sensible basis for admission to our country would be to admit only those who are biologically *superior*" (p. 282).

Despite these things, the book, as a whole, contains a stimulating, candid, and very interesting review of a host of contemporary problems (*e.g.* freedom of speech and of art, birth-control, race prejudice, corrupt politics, etc.), with special reference to current conditions in America. I have enjoyed nearly all of it, and would commend it to the readers of this *Journal*. In addition to his knowledge of American conditions, the author has also a wide acquaintance with Europe. In the stress of argument, however, he seems usually to forget about Europe. Thus it is odd that when he unhesitatingly commends proportional representation he does not refer at all to the recent experience in the two Irelands in this matter; and that when he pleads for a Government press to provide something nobler than a newspaper syndicate he does not fully mention the sad affair of the *British Gazette*.

JOHN [illegible]

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The Theory of Morals: An Introduction to Ethical Philosophy. By E. F. CARRITT. (London: Clarendon Press, Humphrey Milford. 1928. Pp. xii + 144. Price 4s. 6d. net.)

Mr. Carritt has succeeded in writing a really good introduction to Ethics: terse, accurate, provocative, short, and clear. He has most ingeniously blended the dialectical and the historical methods by presenting the more famous principles—hedonism, utilitarianism, perfectionism, etc.—in what he calls a "natural" order, successively establishing the main features of the view he wishes to recommend by points made against each in turn. The argument is prefaced by a short analysis of contents, containing the necessary references to the sources of the doctrines discussed in the text. If I add that the whole discussion occupies only 141 pages, and that it can be bought for the modest sum of 4s. 6d., I hope that I shall tempt everyone who has to conduct a class in introductory ethics to adopt Mr. Carritt's book for the purpose.

The general nature of Mr. Carritt's own views may be inferred from his concluding remark: "Of ethical writers I think that Kant and Butler come nearest to the truth, though I have also learned much, among the moderns, from Lotze and Martineau." Throughout he is eminently fair to writers with whom he disagrees, and every one of his sixteen short chapters contains ample material, excellently arranged, for fruitful discussion.

J. L. STOCKS.

The Meaning of Selfhood and Faith in Immortality. By EUGENE WILLIAM LYMAN. (Cambridge, U.S.A., Harvard University Press. London: Humphrey Milford. 1928. Pp. 47. Price $1.00 net; 4s. 6d.)

This is the Ingersoll Lecture for 1928. Many notable lecturers, including William James, Josiah Royce, G. F. Moore, Kirsopp Lake, Osler, G. Lewis Dickinson, and Ostwald have delivered this annual address, and Professor Lyman's link is not unworthy of the chain. It opens with a brief review of theories which find no place for the idea of immortality. Next follows a discussion upon the meaning of selfhood, which yields the conclusion that the separability of the self from the bodily organism is implied in the nature of selfhood. The further question of its immortality, as distinct from mere survival of death, is held to depend upon the character of the universe as well as the nature of the self. If a theistic philosophy gives a more adequate representation of that character than does a naturalistic philosophy, then belief in immortality becomes rational.

Three reasons are given for accepting the theistic position: first, the order and organization the universe discloses; second, the extent to which the cosmos has produced progress; third, that moral and religious experience imply a cosmic moral will. It will be seen that these are much the same as the old cosmological, teleological, and moral arguments, which, "refuted" a thousand times, cannot be laid. If they are given as proofs, they fail, but as evidence they will always serve to support the theistic hypothesis. The very vitality with which they rise up after the criticism of each generation and adopt some fresh form shows that there is some ground upon which they grow, some validity they have a right to claim. Professor Lyman's "Mote is as full of interest and as clearly expressed as it is possible for the feere to be, and makes an altogether admirable little book.

affection.

E. S. WATERHOUSE.

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I Am. By F. C. CONSTABLE. (London: Kegan Paul, Trench, Trübner & Co., Ltd. 1928. Pp. lix + 105. Price 5s.)

Throughout this little book Mr. Constable is concerned with the implications of the centrality of the appercipient self. Having discovered, he tells us, much that is helpful towards the understanding of Kant in Dr. Ward's *Study of Kant,* he is anxious to tell the world that Kant's position, in essentials, is irrefragable. There is scientific proof, on Kantian lines, he contends, "that the conscious self of science is a permanent self with imagination fundamental for it. This real proper self we *feel* to be a reality, but we do not know what it is. We *feel* it as I AM" (p. 3).

Indeed, Mr. Constable gives a double presentation of his view, for his lengthy introduction says the same thing as his short book, although rather more technically.

Mr. Constable does not seem to have a profound acquaintance with German philosophy. In an odd footnote (p. 97) he says: "The reader must not forget that I am relying on Meiklejohn's and Max Müller's translations: I have not consulted the original *Latin*"(!) Again he makes the amazing statement that Kant "was the first philosopher who understood that metaphysics ought to be treated as a science, and he was the first who so treated it" (pp. x, xi). And he seems to have no interest in the argument of Kant's paralogisms, for he calmly substitutes *I AM* for *Ich denke.*

Nevertheless, he argues with great vigour and spirit concerning a point of fundamental importance, and his book, for that reason, is to be commended. Something of great moment hangs upon Kant's contention that any knowledge of succession is different from successive representations and exempt from *their* succession. Mr. Constable takes this to mean that the ego is time-free (which does not follow in fact), but also concludes that the ego is permanent (forgetting, apparently, that permanence *is* temporal).

It is not at all evident in his pages what feeling is or does. And he might have examined the question whether Kant's "blind" faculty of imagination is not *unconscious* or behind the scenes.

JOHN LAIRD.

Problems in Logic. By CHARLES HENRY PATTERSON. (New York: The Macmillan Company. 1926. Pp. xii + 331. Price 7s. 6d.)

Dr. Patterson has written a useful book for beginners in logic. It is not a treatise so much as a compilation of arguments and pieces of reasoning, drawn from the natural sciences, economics, law, and sociology, to illustrate inductive methods and provide practice in analysis. So the compilation stands to the usual text-book of logic in much of the same relation as a 'source-book' stands to the text-book of history.

The volume consists of an introductory chapter, a "Part I," comprising eight chapters, each of which illustrates by a detailed account of some piece of scientific inquiry, different types of inductive procedure, *viz.* Mill's five methods, the "method of analogy," inductive-deductive method, and certain combinations of these. The scientific evidence relevant to the proof of a given hypothesis is first amply laid out. This occupies some half of each chapter; its second half is devoted to a pretty thorough analysis of that evidence, commentary upon the conclusions reached and upon the cogency of the argument used to reach it, notes on the 'materials and methods' employed in experiments, and references to sections of standard text-books for the relevant logical theory. A student of normal intelligence who has worked carefully through this first part, chapter by chapter, is well prepared to face Part II

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on his own account. This comprises nine chapters, each devoted to four or five distinct 'problems' in the chief empirical sciences, Biology, Bacteriology, Psychology, Economics, Physics, Astronomy, and Law. The examples are well chosen, never trite, but such as incidentally to convey useful and interesting pieces of scientific knowledge (*cf.* Römer on the propagation of light and Newton on its composition, Joule on heat; sunspots and magnetic storms, Ebbinghaus on memory, Malthus on population, James on emotions, Münsterberg on vocational selection; intelligence tests, relations between heredity and crime, the law of diminishing utility, etc.). At the end of each account a list of some half-dozen questions is appended—not general 'stock' questions, but carefully thought-out ones, arising directly out of the preceding evidence itself.

In the introductory chapter the discussions of "The Nature of Inference" and "The Logical Methods," though perhaps too brief and general, are simple and clear. And perhaps the title of the book is more general than the contents warrant, for by "Logic" we must understand only *Inductive* Logic.

Students and teachers alike will appreciate Dr. Patterson's efforts: the former, for his attempt to make their 'practical work' informative as well as diverting; the latter, for having made some contribution to the reform of logical teaching. He has shown, to any one of normal imagination, that the educative importance of elementary logic need be no whit inferior to that of any other "subject." If the present state of logical study in our modern universities amounts to a standing scandal, it is, I imagine, in the main due to the baneful influence of our "intermediate" curricula and the obsolete conception of logic which inspired them, to a lack of thoroughness in the performance of analyses, to a tendency to pass over controversial points of doctrine, to 'shy' at anything that demands any 'subtlety' of treatment—in a word, to a want of that love of rigour and precision without which the study of logic is a trivial and tedious 'grind.' To say that Dr. Patterson's book is a small contribution to "better Logic" is not so much to be meagre in our praise of his work, as to be mindful of the difficulties besetting efforts at reform in the teaching of elementary logic.

S. V. KEELING.

Fitness for Work. By T. H. PEAR, M.A., B.Sc. (London: University of London Press. 1928. Pp. 187. Price 5s. net.)

If it is the characteristic of a good non-technical book that it should interest almost everybody and satisfy almost nobody, this is a first-rate book of its kind. Professor Pear has tackled a number of important psychological, economic, and social problems with immense high spirit, with enthusiasm, and with unfailing wit. In the fluency and grace of its writing the book improves steadily from beginning to end, and if the author consistently leaves one point for another just when the reader wants him to go further with the first that is no doubt design and not accident. Professor Pear says quite enough to make it clear that he could, if he chose, say much more.

The book opens with some interesting remarks differentiating capacities, abilities, and skills. Skill is defined as the "integration of well-adjusted performances." It is distinguished from reflex, instinctive, and habit performances, and some of its accompanying characteristics, both essential and accidental, are discussed. "Creative" skill is regarded as displaying features which are personal to the performer. Here seems to be needed a more radical discussion of the relation of this "personal" character of high-level skill to that "good adaptation" which all skill is said to show. All through this

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opening chapter, in fact, one feels that more needs to be said about perfect and imperfect adaptation.

The next point deals with intelligence, intellect, and skill. This is the least satisfactory chapter of all. The author mainly confines himself to saying what intelligence is not, a fairly easy task, and is, without adequate discussion, inclined to make "intellect" consist in the use of words. This is to be over-determined by the popular prejudice that the man of intellect is often clumsy in practical life.

The succeeding chapter on motives is mostly a list of various possible incentives towards the acquisition of skill with a few notes on each. To some extent this is also true of the following discussion on "laziness," only in this case Pear is farther off the beaten track and writes with great wit and insight. He gives a most suggestive catalogue of the various psychological characters that may induce a man to shun the effort necessary to acquire outstanding skill. The remarks on fatigue, monotony, weariness, repetition, and boredom, which come next are full of acute observation and lightened by a continual play of wit. The final chapter, dealing with the question as to whether industrial skill is worth while, approaches problems of very wide social and economic significance. Pear believes that "Skill in outdoor sports is growing, extensively and intensively. In them there is increasing democratization; of work-skills the opposite is true." For this conclusion many will think, as indeed the author himself says, that the evidence offered is not adequate.

It is an easy and ungrateful task to be an adverse critic: I will get my small grouse over at once. I wish the book were more thorough. For all its sparkle it reads, more often than not, like notes for lectures, together with a few of the more amusing remarks of the lecturer. I am certain that Professor Pear can write a really thorough book on this, as on a great many other topics, and that it would be more worthy of study than most of the books that are published in psychology. In common with numerous other students I look forward anxiously and eagerly to the appearance of such a work from his pen.

However, it is unfair to blame an author for not doing what he does not set out to do. The book as it stands is certainly one to be read, and is an outstanding example of how it is possible to be serious without being solemn. It is full of illuminating ideas, many of which it must be the business of future investigations to submit to the test of actual experiment.

F. C. BARTLETT.

The Child in Primitive Society. By NATHAN MILLER, Ph.D. (London: Kegan Paul, Trench, Trübner & Co. 1928. Pp. 307. Price 12s. 6d.)

This book is the second of a series on Educational Psychology that is being published under the general editorship of C. K. Ogden. It is an attempt to study the sociology of the child, "by drawing upon the materials descriptive of the simpler and of the historical cultures." The writer compares his method with that of Herbert Spencer, Sir James Frazer, and others. He says that it aims at collecting the facts free from theorizing and prejudiced conjecture. He notes that there is a school of anthropologists who hold that societies cannot be regarded as developing along parallel lines, but he maintains that different groups have treated the child in ways so similar that he is justified in assuming a continuity in the attitude toward children from one culture

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period to another. He holds further that the modern attitude towards children derives from their position in simpler societies.

In chapters dealing with the early orientation of the child, infancy and childhood, imitation and suggestion, training, initiation, succession and inheritance, he gives a wealth of examples to show how the child, partly through his tendency to imitate and his suggestibility, and partly through the efforts of his elders, is impressed with the folk-ways and the beliefs of his group. These chapters give the reader a very vivid impression of the strenuousness of life for the young of primitive peoples, and also of the intensity of the struggle to preserve the customs and traditions of the group. The writer shows that in the more primitive societies children were on the whole freer to innovate and to experiment for themselves than in more advanced societies, but his general conclusion is that throughout social evolution the individual possibilities of childhood and youth have been sacrificed upon the altar of conformity to the existing rules and ideals of the group.

In the final chapter on "Social Forces and the Child" Mr. Miller claims that "this pressure making for conformity and the perpetuation of outworn symbols should be replaced by a desire to allow the child to express *himself* and perpetuate *himself* by the development of *his* individuality." (The italics are the author's.) In another place he says that individuals are the ultimate and the only reality in social life. However much or however little the reader may sympathize with this view, he finds it not a little surprising to come upon it at the end of this book which has emphasized the dependence of the individual upon the group for all that makes advance possible. At the point where the reader might well expect a careful deduction from the facts reviewed as to the relative claims of individual freedom and group integration, he is faced with this very trite claim for self-expression.

For its wealth of examples of the treatment of children in primitive society and for its very full bibliography this book will certainly be of value to students of the subject. The reviewer feels that some of the quotations bear upon them the mark of the prejudiced or the untrained observer, and cannot be accepted as unreservedly as the writer suggests. For instance, on page 119 he quotes the following from Cureau: "More than once I have witnessed the pitiful sight of a mere baby cooking his solitary dinner in an old jam tin over a wretched fire." From the sociological point of view it seems questionable whether the group concerned was in an unspoiled primitive state. From the psychological point of view one is tempted to think that the pitifulness, solitariness, and wretchedness may have been in the mind of the observer rather than in the experience of the infant concerned. However, even if the materials have been used somewhat uncritically, the reader cannot but welcome such a mine of information with its bibliography of approximately five hundred titles.

It is unfortunate that the book is written in exceedingly poor English, so poor that the meaning is often obscure, *e.g.*, "The chief source which serves to determine the outlining features of societal life is the limiting support of the natural environment" (p. 27); "Again we are struck by the imperceptible nature by which the child is aggregated to its life habitudes" (p. 142). Mistakes in spelling and words of very doubtful structure (*e.g.* metamorphise, encrustrated, unmercilessly, sacrification) occur so frequently that it seems incredible that anyone responsible to the publishers read the book either before or during publication.

V. HAZLITT.

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Sociality. The Art of Living Together, By ATKINSON LEE, M.A. (London: Holborn Publishing House. 1927. Pp. xiv + 302. Price 5s. net.)

"The burden of the following thesis is that the æsthetical is the central thing in social life, of which the various forms can be healthy only in so far as they conform to æsthetical ideals." So does Mr. Lee define the purport of his own volume, and confesses that his inspiration comes from Ruskin and Browning. Later in the book he acknowledges his indebtedness to Herbart.

In this the author does himself a partial injustice. His volume is not so *démodé* and uncontemporary as he suggests. Ruskin's emasculated moralizing about art undoubtedly has had its effect. It has blinded Mr. Lee both to the tragic violence of the creative artist and to the running tide of æsthetic revival that is one of the outstanding features of the present Europe. The fervent shallowness of Browning's optimism has played its part in throwing a coloured mist over the concrete social situation, blurring the shapes of the living difficulties. For though we find a stream of references to the critical condition of our sick civilization, they are always conventional, often false, and never intimately and vitally apprehended. Herbart, for all his æsthetic theory of education, was not an artist, but a romantic mathematician; and Mr. Lee shares with him the defect of all academic appreciation of the value of art for social purposes. Art can be a patient master or a fiery rebel, but never a humble servant, even of fraternity.

What is really valuable because really modern in *Sociality* draws its inspiration from religion, not from art. Here Mr. Lee's sympathy and understanding are with the post-war world, with the Quaker spirit which almost alone of our religious movements has renewed its youth because it rejected the war; with movements like Toc H, which grew out of the war itself. Through his sympathy with these he does indeed disengage the need and the demand of the new world, the need for the cultivation of fellowship and fraternity, the demand for a corporate control of the forces which mould society, which shall be really spontaneous and effectively communal, in the interest of a satisfying and harmonious social life. On this subject Mr. Lee has much to say that is vital and valuable, and we hope that it will be widely read.

The earlier sections of the book are an effort to provide the essentials of an æsthetic philosophy which will support this fine ideal. For this purpose they are of little value. The philosophy is not a new one, but rather an eclectic patchwork, an *ad hoc* construction from pre-war philosophy, psychology and sociology, in which tags of theory from the most varied and antagonistic sources are pieced together in so far as they seem to agree with the desired conclusion. To make it otherwise two things are needed, a much subtler and more penetrating analysis of the artistic (not the æsthetic) consciousness, and a more intelligent sympathy with the new movements in art, even when they seem extravagant and childish. Were Mr. Lee's æsthetic appreciation less academic and remote, less an echo from before the deluge of 1914, he might realize that some of the social facts which he deplores, such as the ubiquity of jazz, the passion for dancing, even the popularity of the sex novel, are expressions of the same spirit which he loves and admires among the religious movements of the day; and if he realized this he might frame the philosophy which we stand in need of and which he himself desires.

JOHN MACMURRAY.

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The Unconscious in Action. By BARBARA LOW. With a Foreword by Professor T. P. Nunn. (University of London Press, 1928. Pp. 226. Price 5s. net.)

Miss Low's book may be described as an attempt to apply the principles of psycho-analysis to the problems of education. The general standpoint is Freudian, but even to those who do not accept Freud's teaching in its entirety, much of what she has to say will be found of value. She makes out a good case for the need of co-operation between the educator and the psychological expert, who is to act generally in an advisory capacity. The teacher himself should not attempt analysis, but should be sufficiently familiar with the general implications of psycho-analytic theory to be in the position of bringing to the notice of the analyst cases that require treatment. Standing as he does in a relation to the children of extreme significance and power, the teacher needs to know himself and the elements in him which have been repressed if he is to understand and deal in an intelligent manner with the primitive impulses operating in children. Miss Low is particularly illuminating in her discussion of some of the familiar problems that confront the teacher in dealing with such phenomena as antagonisms between children, cases of cruelty, lying, inattentiveness, dreaminess, sudden arrest of development, untidiness, and the like, though naturally not all that she has to say will be accepted by those who are not in sympathy with the psycho-analytic point of view.

On the theoretical side the most interesting part of the book is, perhaps, the discussion of the nature of sublimation, which, following Freud, she interprets as a process whereby the energy of the sex instincts is diverted from its original goal to ends socially more valuable. She stresses the unconscious character of the process and points out that to be successful sublimation must link on the tendencies which are to be developed to existing primary interests.

In her concluding chapter Miss Low discusses from the analytic standpoint the effects of co-education, the value of the Montessori Method, and of mental tests. In regard to the latter she argues that the results obtained by their means are likely to be misleading because they ignore the emotional disturbance and conflicts that may be set in action in some cases by the tests. Further evidence seems desirable on this point. Experiments so far made do not, as far as I know, support her contention. (Cf. Spearman, *The Abilities of Man*, p. 338.) Upon the whole, the book may be warmly commended to those who are interested in the newer developments of educational theory.

MORRIS GINSBERG.

Cheiron's Cave : A School of the Future. By DOROTHY REVEL, M.A. Cantab. (London: William Heinemann. 1928. Pp. ix + 222. Price 7s. 6d.)

On a mountain-side in Thessaly Cheiron founded a cave-school for heroes. Twenty centuries have passed, and his experiment seems never to have been repeated. But in the school-community which has grown up around their own family in a country house in Norfolk Mr. and Mrs. Faithfull are now following something like the primitive plan of the Greek pedagogue In her little book Miss Revel, who was formerly an assistant mistress at the co-educational school at Bedales, and is now senior mistress at Priory Gate, has undertaken to describe the methods employed in the "family-school" and the theories on which those methods are based.

Somewhat ambitiously, her book is described as "an educational synthesis based on the new psychology"; and in the first section what she understands by the "new psychology" is briefly set out. She opens with a popularized

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description of Jung's classification of human types, and puts forward a strong appeal for the need of an education both in "extroversion" and in "introversion," which seems to mean, in simpler language, an education both in self-expression and in self-control.

The second and by far the most valuable portion of her book describes the educational practice which she takes to be founded upon the principles of the "new psychology." To a large extent the details profess to be deduced from the recapitulatory theory of mental development. The child "is born at the stage of development approximately corresponding to that of early man, and in his growth from birth to adult life he follows out roughly the history of the development of mankind up to the present day. There is no short cut for him." From this it is argued that "the farther civilization advances away from the barbaric, the greater our need of barbarism at the beginning of human life." The concluding and most interesting chapters describe the education of children at successive periods of their development —of "elves" (aged 1 to 8), "woodlings" (aged 8 to 12), "trackers" (aged 12 to 15), and "pathfinders" (aged 15 to 18).

The underlying psychological doctrine is open to criticism at many points, but the practical methods of teaching and training are undoubtedly suggestive. Probably the most useful contributions are to be found in the full and entertaining descriptions of the ways in which children, brought up under free and simplified conditions, behave at different stages of their mental growth.

CYRIL BURT.

Received also:—

R. J. WARDEN. *An Outline of Comparative Psychology*. London: Kegan Paul, Trench, Trübner & Co. 1928. Pp. 147. 2s. 6d.

BERTRAND RUSSELL. *Sceptical Essays*. London: George Allen & Unwin, Ltd. 1928. Pp. 251. 7s. 6d.

HOUSTON PETERSON. *Havelock Ellis: Philosopher of Love*. London: George Allen & Unwin, Ltd. 1928. Pp. ix + 432. 18s.

CLETO CARBONARA. *L'Idealismo di O. Hamelin*. Napoli: Soc. Anonima Editrice Francesco Perella. 1928. Pp. xi + 254. Lire quindici.

DR. JOHN B. WATSON and PROFESSOR W. MCDOUGALL. *The Battle of Behaviourism*. London: Kegan Paul, Trench, Trübner & Co. 1928. Pp. 103. 2s. 6d.

MARGARET MORRIS. *The Notation of Movement*. London: Kegan Paul, Trench, Trübner & Co. 1928. Pp. 103. 2s. 6d.

BORIS JAKOWENKO. *Vom Wesen des Pluralismus*. Bonn: Verlag von Friedrich Cohen. 1928. Pp. 72.

E. WALES HIRST, M.A., B.Sc. *Ethical Love: Its Basis and Expression*. London: George Allen & Unwin, Ltd. 1928. Pp. 285. 7s. 6d.

WILLIAM JAMES. *The Varieties of Religious Experience* (New Edition). London: Longmans, Green & Co. 1928. Pp. xii 534. 6s.

J. B. TOMBLESON, B.A., M.D., B.Litt. (Oxon). *As Above So Below*. London: Williams & Norgate, Ltd. 1928. Pp. x + 116. 5s.

Supplemento ad "Schola et Vita." Organo de Academia pro Interlingua. "Guiseppe Peano." Milano. 1928. Pp. 96. Lire 5.

T. PERCY NUNN, M.A., D.Sc., Litt.D. *Anthropomorphism and Physics* (Annual Philosophical Lecture: Henriette Hertz Trust British Academy, 1926. From the *Proceedings of the British Academy*, Vol XIII). London: Humphrey Milford. 1928. Pp. 35. 2s.

L. GRIMBERG, M.D. *Emotion and Delinquency*. (Library of Educational Psychology.) London: Kegan Paul, Trench, Trübner & Co. 1928. Pp. 147. 7s. 6d.

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K. KOFFKA. Translated by Robert Morris Ogden. *The Growth of the Mind. An Introduction to Child Psychology.* London: Kegan Paul, Trench, Trübner & Co. 1928. Pp. xix. + 427. 10s. 6d.

J. S. MACKENZIE, Litt.D. Camb., LL.D. Glasgow. *Fundamental Problems of Life. An Essay on Citizenship as Pursuit of Values.* London: George Allen & Unwin. 1928. Pp. 384. 12s. 6d.

LUCIEN LÉVY-BRUHL. Translated by Lilian A. Clare. *The "Soul" of the Primitive.* London: George Allen & Unwin, Ltd., 1928. Pp. 351. 12s. 6d.

JAMES WELTON, D.Lit., M.A., and A. J. MONAHAN, M.A. Revised by E. M. WHETNALL, Ph.D., B.A. *Intermediate Logic.* Third Edition. London: University Tutorial Press. 1928. Pp. xvi + 508. 10s. 6d.

C. G. JUNG. Translated by H. G. and Cary F. Baynes. *Contributions to Analytical Psychology.* (International Library of Psychology and Philosophy.) London: Kegan Paul, Trench, Trübner & Co., 1928. Pp. xi + 410. 18s.

JOHN ELOF BOODIN, Ph.D. *Cosmic Evolution.* New York: The Macmillan Co. 1925. Pp. 484. 3 dollars 50.

WILFRED EARL CHASE. *Poems.* Madison, Wisconsin: W. E. Chase. 1928. Pp. 224.

CECIL JOHN CADOUX, M.A., D.D. (Foreword by J. Vernon Bartlett, M.A., D.D.) *Catholicism and Christianity. A Vindication of Progressive Protestantism.* London: George Allen & Unwin, Ltd., 1928. Pp. xl + 708. 21s.

MARGARET DIGBY. Edited by the Horace Plunkett Foundation. *Producers and Consumers. A Study in Co-operative Relations.* London: George Routledge & Sons, Ltd. 1928. Pp. x + 203. 5s.

F. M. STAWELL and G. LOWES DICKINSON. *Goethe and Faust. An Interpretation with Passages Newly Translated into English Verse.* London: G. Bell & Sons. 1928. Pp. 291. 15s.

CYRIL BAILEY, M.A. *The Greek Atomists and Epicurus.* Oxford: Clarendon Press. 1928. Pp. ix + 619. 24s.

D. F. FRASER-HARRIS, M.D., D.Sc., F.R.S.E. *The A.B.C. of Nerves.* London: Kegan Paul, Trench, Trübner & Co. 1928. Pp. xi + 223. 4s. 6d.

S. RADHAKRISHNAN. *The Vedanta according to Samkara and Ramanuja.* London: George Allen & Unwin, Ltd. 1928. Pp. 287. 10s.

H. A. PRICHARD. *Duty and Interest* (Inaugural Lecture delivered before the University of Oxford on October 29, 1928). Oxford: Clarendon Press. 1928. Pp. 44. 2s.

A. S. EDDINGTON. *The Nature of the Physical World.* Cambridge University Press. 1928. Pp. xix + 361. 12s. 6d.

VARIOUS (Edited by Charles A. Beard). *Whither Mankind. A Panorama of Modern Civilization.* London: Longmans, Green & Co. 1928. Pp. vii+408. 12s. 6d.

MAY WALLAS. *Luc de Clapiers Marquis de Vauvenargues.* Cambridge University Press. 1928. Pp. viii + 308. 12s. 6d.

FR. ROBERT HAMUI, O.F.M. *Alfarabi's Philosophy and its Influence on Scholasticism.* Sydney: Pellegrini & Co. 1928. Pp. 86.

C. E. M. JOAD. *The Meaning of Life as Shown in the Process of Evolution.* London: The Rational Press Association, Ltd. 1928. Pp. iv + 60. 1s.

ELYSTAN THOMAS. *What Existence Means.* London: Watts & Co. 1928. Pp. xiii + 195. 3s. 6d.

RICHARD MCKEON, Ph.D. *The Philosophy of Spinoza.* New York and London: Longmans, Green & Co. 1928. Pp. viii + 345. 5 dollars; 25s.

Owing to lack of space the remainder of the list is held over until the next number.

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INSTITUTE NOTES

LENT TERM begins on January 10th, and ends on March 22nd.

The courses of lectures for the Lent Term are as follows:—

"CIVILIZATION AND SPIRITUAL LIFE": A course of six lectures by Professor LEONARD RUSSELL, M.A., B.Sc., D.Phil., on Fridays at 5.45 p.m., at University College, Gower Street, London, W.C. 1, beginning on February 15th.

"CONTEMPORARY PHILOSOPHY," by the DIRECTOR OF STUDIES, on Wednesdays, at 6 p.m., at the Royal Anthropological Institute, 52 Upper Bedford Place, W.C. 1, recommencing on January 16th.

CARDIFF CENTRE

The new Centre at Cardiff City was established on October 24th last, when Professor A. A. Bowman, of the University of Glasgow, delivered an Inaugural Address entitled *Philosophy and Life*, at University College, Cathays Park. The meeting was a large one, and the Centre was duly formed with becoming enthusiasm.

Two courses of lectures are being given during the Session: one by Professor J. W. Scott entitled *The Ethical, Social, and Economic Order*; the other by Mr. J. M. Thorburn, B.A., entitled *Artistic Vision and Philosophical Reflection*. The Hon. President of the Centre is Alderman Herbert Thompson, M.A., and the Chairman is Professor J. W. Scott. M.A., Ph. D. The other officers are: Hon. Treasurer, W. J. Roberts, M.A.; Hon. Secretary, John Thorburn, M.A., B.Sc.; Hon. Assistant Secretary, Dr. Luther Owen, B.A.; Members of Committee: Principal Phillips, D. J. A. Brown, Professor O. Wheeler, D.Sc., Miss Stainer, Rev. D. Ellis Jones.

NORTH WALES CENTRE

The opening of a Centre of the Institute for North Wales took place at Bangor on Friday, November 2nd, when Professor Leonard J. Russell, of the University of Birmingham, delivered an Inaugural Address entitled *Reality, Science, and the Artist*, at the University College of North Wales. The Chair was occupied by Principal D. Emrys Evans, M.A., B.Litt., and the meeting was well attended.

Professor James Gibson is the Chairman of the Centre. The other officers are: Secretary and Treasurer, Mr. A. K. Stout; Committee, Professor Daniel, Mr. Basil Jones, Mr. E. H. Jones, Miss G. Lewis.

The Secretary writes that the North Wales Centre is now well on its legs and is engaging in various kinds of philosophical activity designed to meet the needs of members and others interested in philosophy.

BROADCAST TALKS ON PHILOSOPHY

Professor Leonard Russell is to give a series of Broadcast Talks entitled *The Modern Outlook: How it Arose*, (from Daventry, 5XX, only) between 8 and 8.30 p.m., beginning on January 22, 1929. The titles of the "Talks" are as follows:—

January 22.—"SOME IDEAS OF TO-DAY."
January 29.—"THE MIND IN BLINKERS."
February 5.—"CAN CLEAR IDEAS BE TRUSTED."
February 12.—"ON REFUSING TO GO BEYOND THE FACTS."
February 19.—"THE REASONS OF THE HEART."
February 26.—"THE IDEAS OF TO-DAY AND THE IDEAS OF TO-MORROW."

Members are requested to make these "Talks" known to their friends, They may well prove to many to be the beginning of an awakening to the importance of philosophy.

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* By the Memorandum of Association, a member of Council on accepting lectureships with fees *ipso facto* ceases to be a member of the Council or Governing Body, and shall only be eligible for re-election after he shall have ceased to hold such office. This provision applies to those original members of Council whose names appear in the syllabus as lecturers for the Session 1927–28.

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MORAL VALUES

PROFESSOR J. L. STOCKS

I

A STUDY of moral values is a study of the values relevant to character and conduct. Since conduct consists of actions (including refusals to act) and character is exhibited in and inferred from actions, the phrase "values relevant to actions" would perhaps suffice. The term "values" needs little amplification. But it is necessary to observe that there are on the face of it two sets of values relevant to actions, namely (1) those which actions themselves possess, so that we differentiate them as good and bad actions—a differentiation which may be made by a spectator in regard to a process in which he himself takes no part; (2) those asserted implicitly by an agent in his action considered as an interference with the course of events. In the most obvious and typical cases this second set of values attach themselves, not to actions, but to the environment of action as modifiable by it; in particular, to states or events which action may help to maintain or bring about. Thus the act of tidying a room implies a preference under the given circumstances for a tidy rather than an untidy room. Whether, and if so in what sense, a value of the first class, *i.e.* the goodness or badness of an action, can serve as a value of the second class, *i.e.* as a determinant of intelligent choice or purpose, is a disputed question. Clearly a human being, in virtue of his self-consciousness, is able to become the spectator of himself; and before engaging in action, or while engaged upon it, he may ask himself how the action itself should be valued or judged. He thus becomes the judge in imagination of himself, and it seems natural to suppose that the result of this intellectual experiment may be to lead him to modify or discontinue the line of action projected or initiated. If so, the value

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implied in his discontinuance or modified continuation will be in part at least a value of the first class which determines action and thus serves as a value of the second class.

That such an imaginative self-judgment plays an important, if not essential, part in what we call morality, most moralists, ancient and modern, who are not pure utilitarians or hedonists, have explicitly or implicitly maintained; and I myself am disposed to agree with them in this. Only I do not think it explains quite as much as some of them thought it explained, and I have to admit that there are serious difficulties which can only be circumvented by very cautious and careful statement. The chief difficulty arises from the fact that the essence of action seems to be the valuations implied in it, *i.e.* the main ground for favourable valuation of an action (for asserting value [1]) is full acceptance of the valuations of the second class which the action seems to presuppose in the agent. In more ordinary terms, an action to be reckoned good must exhibit sound preferences. For instance, an action which seems to imply a preference for the unhappiness of others is so far bad, and an action which implies a preference for their happiness is so far good. Now suppose a man finds himself engaged in a course of action which, if continued (as he discovers by imaginative self-judgment), would be open to the former interpretation, and stigmatized as cruel. Suppose that, on becoming aware of this, he modifies his action, so that it is not open to this interpretation. What has happened? Clearly he will be entitled to escape the blame which attaches to callousness or cruelty; but he does not seem to be entitled to the praise which is accorded to benevolence, *i.e.* the active preference for the happiness of others. It cannot be supposed that the reflection that the projected act would be judged by an impartial spectator to be cruel or callous will of itself create a *direct* motive to an action of opposite tendency. There is therefore no real benevolence in the amended course of action, no preference for the happiness of others in itself. What is operative is a preference for a line of action which will not involve him in self-condemnation.

Though conscience is often said to be the guide of life, its operations (so far as they are investigated at all) are commonly conceived after the foregoing model. "Thus conscience doth make cowards of us all." But clearly the conscience which makes men cowards is rather a censor than a guide. Its decrees form a kind of criminal law; it intervenes to deter and punish; and the very nature of its action implies a better state in which it would be reduced to inactivity by the removal of all grounds for interference. In the perfectly healthy will conscience is in abeyance, as the criminal law will disappear from sight in a perfectly healthy community. But if this is so, then either conscience is not of the essence of

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morality, or there is a goal beyond morality on which morality depends for its meaning. Classical Greek thought argued cogently that justice cannot be supposed to reside in the action of the judge who directs the restoration of the social order where it has been disturbed; that would make its existence dependent on the presence of defect and disorder; the positive value must lie in the order itself which the action corrected by the judge disturbs. So here, if the action of conscience is correctly typified by the above example, it must surely be conceded that the intervention of conscience derives its value from a further good in whose interest it intervenes; its action is instrumental merely and conditioned by the presence of defect. Or, recurring to the two classes of values, the same point may be put thus: It would seem that the intrusion of values of the first class into the determination of action—*i.e.* their appearance among values of the second class—cannot be of the essence of morality, unless morality is merely a second best. For this intrusion implies in its very nature an ideal in which the values implicit in action are perfectly acceptable to an impartial observer, which means, as we have seen, that values of the first class do not appear among them.

II

I propose now to undertake an analysis of action with a view to throwing further light on the problem just stated.

An action is essentially an interference by a person with the course of events, and its implications may be followed in two directions—not in complete independence of one another—into the personality of the agent on the one hand and into the environment affected on the other. Thus an action may be valued in two ways: (1) in respect of its contribution to the course of events, (2) in respect of the mind or character shown in it. Since events are more directly observable and more easily analysed than characters, the first valuation is the more easily made, and until some progress has been made with it, the second valuation is in fact impossible. But it is incontestable that a valuation of an act in respect of its contribution to the course of events is far from a complete valuation of it. It may be possible under favourable conditions to determine accurately the kind and degree of contribution which a given action—the saying of certain words or the application of remedies to a wound—made to a known relatively simple issue, *e.g.* the resignation of a minister, the survival of a wounded soldier; but if the whole is really to be interpreted as action, and not as a mere concatenation of movements, it must be seen finally as the activity

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or self-expression of a human personality. For this purpose the results must be reformulated as intentions, and at once a doubt arises how far the results actually accruing can be taken to correspond with the results anticipated by the agent at the time of the act, perhaps even how far the knowledge available at the time of action would have enabled anyone to foretell the issue. It is therefore a very paradoxical view of the Utilitarians that the valuation of action proceeds (or should proceed) only by reckoning results; but even they admit that there are these two lines of judgment which may give rise to divergent estimates: only they prefer to regard the second kind of valuation as a valuation of the agent rather than of the act, and argue that this valuation of the agent depends itself ultimately on results, since to call him good is to recognize him as capable of making great contributions to human welfare. It seems clear that a full understanding of action must pursue both sets of implications, and that the distinction between valuation of the agent and valuation of the act cannot in this sense be upheld. It also seems clear that the moral philosopher, in his capacity as moral philosopher, is not occupied in reforming the world, but in trying to understand what moral value is, and therefore that he is not interested in the contribution of action to the course of events for its own sake at all, but only as evidence of the mind and will which the agent expressed in the act. The second valuation is the one in which he is interested, and in the first only incidentally as throwing light upon it.

So far we have adopted the point of view of the spectator of an action, who can follow it in two directions, to its source in the character of the agent and to its issue in the welter of events. If we now adopt the point of view of the agent himself, we shall find a parallel but somewhat modified dualism. He will justify his actions, if they are questioned, mainly in terms of the external series: "this is done in order to make that possible," and so on; but the explanation will depend for its plausibility, at least as often as not, on the fact that the result to which the action leads represents something that the agent likes or desires. Thus the constructive effort which is his action is found to be expressive of desire or liking. He will also observe, if he observes his own behaviour at all closely, any amount of detail in it, which is purely expressive in its character. I do not mean that the movements in question have no effect on his environment; only that they appear to be made without any reference to their possible effects on it. A man will speak loud because the person he is speaking to is deaf and because he likes to be heard; but he may also speak loud because he is angry, or because it is his habit so to speak. A wounded man will cry out, and his cries may actually bring people to help him;

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but it was not with that object that he cried. Every one has his tricks of speech and movement which, though they may on occasion be used for certain ends, exist and persist independently of purpose and even to its prejudice. Actions, then, regarded from the point of view of the agent, have a dual character, as expressive on the one hand and constructive on the other. In the one view they are regarded as contributions to the flow of events and as justified by what occurs there; in the other they are seen to be explained, if not justified, by some state or attitude of the agent himself. It is in principle the same dualism as before; but the agent tends to regard action rather in its constructive aspect, the spectator rather on its expressive side. Character and motive bulk much more largely in our judgments of other people than in our own decisions.

Action is not born rational, and on the basis so far offered it is not easy to see how it should ever become rational. On every side it seems to run back into some inexplicable personal caprice. As expressive it refers us to desires, emotions, instincts, habits, likings, affections—a motley crowd into which it will be convenient not to inquire further—and generally to a personal idiosyncrasy, which in practice earns a chuckle of delighted recognition when the personality is one we like, and a snort of disgust when it is one we dislike. And on the other, the constructive plane, as formative of events, it only maintains its apparent reasonableness so long as we forget that the issues to which it works are ends dictated by this same idiosyncrasy, referring us equally to the surd of psychical fact. The irrational preferences in which action is born are presuppositions of the apparently rational preferences in which its maturity finds expression; the development is merely in the direction of increased persistence and tenacity in the pursuit of an arbitrary end.

But though action is not born rational, it strives to become rational; it tries to rationalize itself, *i.e.* to become such that it can justify itself completely to itself and to others. Moral theorists have usually attempted to exhibit morality as part of the struggle towards rationalization or as its goal. The form under which we first find ourselves naturally impelled to rationalize action is that of purpose, which involves an analysis into means and end; and the simplest conception of morality (the special value which attaches to action as such) is that of complete success in this endeavour. Good action is that which is fully and completely rational, which means action that can exhibit itself as the pursuit of the right end by the right means.

This simple and obvious scheme breaks down completely on analysis—first, because of its own inherent weakness: action cannot be completely rationalized on these lines at all; secondly, by its

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inability to account for our actual moral judgments, because the rationalization of action on these lines, so far as it can be carried out, does not necessarily mean the achievement of good action.

To see how it breaks down, let us dismiss all question as to means, supposing them in every case beyond criticism, and concentrate on ends. We find a number of different things—states or relations or events—which the various actions are said to be justified by their tendency to produce; products of action for which the actions which generate them are valued. If these are left a mere multiplicity, in no relation to one another, the adoption of a given end in a given situation remains a mere irrational caprice. They have therefore to be brought in some way into a unity, either by being exhibited as some sort of system, or by being represented as contributing to a single ultimate product or end on which they all converge. But no such ultimate end can be found: if there is a "far off divine event to which the whole creation moves," man has not found it; and the system of all goods, though it may exist and operate unconsciously in human action, escapes definition and description, and must therefore fail to serve as the recognized justification of human action. Thus action refuses to be rationalized because ends refuse to form a unity. The choice of ends is not in practice justified by reference to an ultimate end, but rather by common consent and usage. No aim, it is assumed, is unreasonable which all men or most men adopt.

Further, such justification of action, whether complete or incomplete, is not a moral justification of action. The general principle of its argument is that the end justifies the means; and morality refuses to accept this principle. It insists on questioning means which can be shown to be the best within reach to a perfectly reasonable or generally accepted end. The demand of morality enters not as a last clarification of the nexus of means and end, nor as an illumination of the mutual relations of our ends which reduces all to system and makes the way quite straight and plain, but as an additional complication, something impinging on these purposes from without, disturbing and hampering their execution. All attempts to reduce the apparent conflict to harmony, by representing the demand of morality as the call of a more distant or more real end, break down, and must break down, because the conflict is of the essence of the matter, and because in accepting such demands no specific product can be found to which men's effort is directed. A purpose is judged by its fruits, and claims no other test. Morality has no special fruit of its own, and the issue of the actions in which it is specially engaged is indistinguishable to the closest inspection from those in which it is not. The goodness of a good man does not depend on this, that he has a different end

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from a bad man, or a clearer view of the same end, or a single end where he has many. One or more of these superiorities he may well possess, but these by themselves do not constitute moral eminence. His distinctive gift and power must be sought elsewhere.

III

In the foregoing I have taken the term purpose as appropriate to the outward and forward looking attitude of a man who is trying to manipulate the elements of a situation so as to bring something about. It represents, then, concentration on results, and the future reference is inevitable. This interpretation is natural if action is regarded in its constructive aspect. The systematization of purpose so regarded is necessarily an attempt to represent each act as a contribution to a single great structure which is being built up piecemeal, some vision of the structure as a whole controlling each addition to it. But the attempt may also be made to co-ordinate action under its expressive aspect, with reference to its source in personality; and from this angle the future reference may seem less obvious—or at least less central—and a rather different interpretation of purpose may be possible. The progress of action towards rationalization, on this interpretation, will be from the random and disconnected expressions of desire and impulse, in which the man is one-sidedly active, in the direction of an ideal in which every act is the expression of a unified and harmonious personality identifying itself wholly with the act. This view, stated thus in general terms, is immediately attractive, partly because it brings us back to the obviously fundamental ground of character, partly because our own familiar experience of life convinces us that some such internal harmony is characteristic of men who have achieved real goodness. But it is necessary to look the idea more closely in the face than that, and on closer inspection a number of things seem plain.

First, if this idea is to have any precision, the most fundamental requirement is a clear idea of the multiplicity out of which purpose and character emerge and of the unity or harmony into which they grow or try to grow. The names of Plato and Bishop Butler come to mind at once as thinkers who have tried this method of approach; but both attempts may well be judged defective in the detail of their account. Neither of them wrestles very seriously with the primæval multitude of impulses or "particular propensions," and neither of them succeeds in establishing any positive relation between the controlling power (philosophy in Plato, conscience in Butler) and the multitude controlled; so that the organization resembles rather a dictatorship than a system or harmony, and the fundamental problem remains unsolved—as so

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often in a dictatorship—whence does the dictator draw the strength to maintain his position.

Secondly, it is essential to clear up the relation between this internal order, from which as source good action proceeds, and the external efficacies in which it issues. The terminology of means and end has been used to express the relation, but it is plainly inadequate for the purpose. Nothing is properly called an end which is not causally connected with changes directly initiated in the action. But if the causal implications of these changes are followed out, they will no doubt in the long run at one point or another return upon the agent as external forces influencing his condition and behaviour; but the self-influenced must be a future self, not the actual self expressed in the action. And the explanation wanted is that of the relation between the present self and its issue in act. The self is commonly thought of as *determining* the act. This present self cannot be at once the determinant and part of that which is determined, at once cause and effect. Being cause, it cannot be effect, and not being effect it cannot be the end of action. If we suppose (as seems reasonable) that this internal order is such that it can only be generated and expressed in and through action, then the terminology of means and end is plainly inappropriate to the relation between it and the action in which it is expressed. The painter's gift is such as can be expressed only in pictures. If we are asked to apply means and end here, we are puzzled. Is the existence of the painter justified by that of the picture, or the existence of the picture by that of the painter, or are both means to the existence of Art? These questions are probably not worth answering; but if a choice had to be made between the alternatives offered, we should be safest in choosing the first. It is certainly true, though it may not be a very important truth, that painters continue to exist because pictures are wanted. It is also true, and probably a much more important truth, that pictures express their makers; further, you can say without absurdity that the picture is what it is because the painter is what he is; but there is no causal sequence here as in the former case. The demand for pictures might exist for a time unsatisfied, but what is there expressed could not be unexpressed except in the sense that the picture might not exist. The painter's skill and vision and their expression are both to be found, so far as they can be distinguished, within the work of art. The causal relation, which by a convenient modern restriction has come to involve temporal sequence, is therefore excluded, and with it the terminology of means and end. The relation is between co-existents. Of course there is also the fact that the artist is not devoid of foresight and prudence, and that one of the considerations that will influence his production will be the development and

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maintenance of his artistic gift. He may, *e.g.*, attempt what is for him a quite novel subject or treatment with the deliberate idea of widening his range. So far as such considerations operate, there will be a genuine future reference, and so far the terminology of means and end will be appropriate. But this is accidental, not essential; on these lines only a very partial and as it were external account of the works he actually produces can be given.

With the necessary changes all this can be transferred to the moral agent conceived (as we are now conceiving him) as expressing a disciplined and ordered personality in action. For him also any reference to a future state of himself, to the further maintenance and development of his internal order and discipline, will be accidental, not essential—forced upon him from time to time because circumstances happen to be such as to threaten future disturbance. The act and the character shown in it are coexistents, not antecedent and consequent; and means and end, cause and effect are equally inappropriate to their relation. Where occasionally these terms are appropriate, they apply not to a relation between character and act, but to a relation between a present and a future character-act complex.

Thirdly, however true it may be that the ordered unity of character described represents the finest achievement of humanity and the highest moral value, it is impossible to find in the conception of such a unity a full and sufficient ground for the actual practical decisions which a person possessing it would take. It may be granted that in every decision he will maintain and develop this unity, and from time to time some element in his decisions may be directly due to his determination to develop and maintain it, but in general the detail of his actions has to be supplied from elsewhere. Until this detail is in some way supplied he can have no formed purpose or intention whatever; therefore he is not rightly described as having an end. End and means are correlatives like form and matter, and the convenience of the analysis by which we distinguish them must not be allowed to make us suppose them separable. Ends exist only in means chosen for their sake, as form exists only in matter, though form and end, being universals, are not confined to this or that particular vehicle. There is no preliminary stage of mere thought, in which an end is conceived and the possible means to its realization explored, followed by a stage of mere action in which the plan is carried out. The active life does not cease while we think, and our thought is at its most intense while we act. The process is not from abstract to concrete, from the thought of a pleasure to the fact of enjoyment. An oak-tree does not begin with the thought of an oak, but with an acorn, which is a germinal oak, and similarly a full-grown manifestation of the

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human will has its antecedent in half-grown and germinal predecessors of the same kind. The early stages in the development of purpose are all of the nature of action, though they may give no indication of their existence to an external observer. By sense and thought man is kept in continuous touch with the development of the situation in which he maintains himself; his mind reaches before and after, and without conscious effort he senses the direction of events; on the basis of what is present he is always preparing himself for what may come. He is always reviewing and revising his dispositions, putting one tool away and taking up another, changing his own attitude and posture; and every act is part anticipation. Watch any activity which is mainly physical in its expression, and the description is easily verified. The skilled tennis player moves smoothly from his stroke to the place where the return may be expected and assumes the position of readiness to meet it. His end or aim is not embodied in a preconceived plan which he carries out according to specification; it is rather something that may be detected in the whole series of movements as a control and determinant of direction, something also that may be distinguished analytically from them as form from matter, essence from accident. The detail of expression depends on circumstance. Given the persistent aim and tendency, at any moment a variation in the opponent's behaviour would have dictated a variation in the game developed to meet them.

Now a tennis player, like other people, may be supposed to have various ends in playing tennis, many of them perfectly compatible with one another. He may want exercise or distinction or victory; he may be concerned to recommend himself to a particular person, or for a particular appointment, or to win a particular prize. Let us suppose that in the given case all such concerns are absent or quite subordinate, and that his main preoccupation is to express and maintain his own skill at the game. His attitude then will be precisely similar to the moral attitude with which we are concerned —that which takes as ultimate a certain harmony and unity of character. All ends, I have said, are formal, in that they determine the general nature of what is done, but not its detail. But if there are degrees of formality, this preoccupation must be adjudged more formal still. For it does not determine what is to be done at all—not even in its most general outline: it merely determines that if certain things are done (if, *e.g.*, tennis is played), they shall be done in a certain way (*i.e.* in a manner worthy of the player's skill). Morality, however, unlike tennis, is coextensive with action, and therefore with life. Hence a similar formal requirement framed in the name of morality loses this hypothetical character, and becomes a quite general demand that whatever is done shall be done in a

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certain way. In both cases (tennis and morality) I suggest that submission to such a requirement is not properly described as the adoption or prosecution of an end: it is a requirement generally compatible with any end and occasionally found in conflict with all; and further that action considered as conformed to such demands is better not described as purposive, since it is convenient to restrict purpose to the attitude of concentration on ends. But if you choose to extend the term purpose to include all open-eyed activity, then you will be justified in calling art and morality purposive, and you will have to invent another word to represent concentration on ends.

We have now arrived by a rather tortuous path at the suggestion that the moral demand is a demand that whatever is done shall be done in a certain way. Vague as this formula at present is, I want to consider it seriously and on its own merits. But first let me make a remark arising from my use of the word hypothetical above. It may be supposed that when I use hypothetical of the demand of skill and refuse to use it of the demand of morality, I am introducing a well-known Kantian distinction and preparing the way for the categorical imperative. Well, it would perhaps be no bad thing if our argument brought us back to Kant; but I feel bound to point out that it has not so far done so. My contrast was between a restricted and an unrestricted reference, between something universally applicable and something which applies only in a special region. The character of the demand, where it happens to be in place, is not affected by this distinction. To the tennis player engaged in his game, to the artist at work upon his art, the demand of his skill for its maintenance and due expression is as categorical as any demand can be: there is nothing conditional about it. As it operates, it controls and limits the use of skill in ways which the ends in view alone fail to explain, and we call it the artist's self-respect, or sometimes the artistic conscience. The last is a good name for it, for it is, as we shall now see, the principle which in that limited but autonomous sphere plays the part which in life as a whole is played by the moral principle. It does not determine the work to be done, but it lays down conditions negative and positive as to its doing.

Action, as I said, strives to become rational and self-justifying. In its constructive aspect, ordered under the notion of purpose, it can achieve a certain unity, but not that final and satisfying unity which it desires. We have here the suggestion of another principle of unity—not a rival, I think, but an ally—which may tie some of the loose ends and give a general continuity to the practical life.

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IV

Let us go back for a moment to our tennis player. He is playing a game; and into the origination and conduct of the game all sorts of motives may enter, each emphasizing some particular element in the complex activity and some particular line of future continuation, all, however, depending on the established convention that he is trying to beat his opponent. This convention dictates one standing purpose or aim which he must maintain throughout; and the other motives derived from probable consequences of the activity presuppose this standing purpose and rather strengthen than weaken it. (Of course he might have reasons for wishing not to beat his opponent, but such a motive would be an interference with the game, and so far as effective would introduce an element of deceit and pretence into his action.) Distinct in kind from all these motives and calculations, but also capable of modifying the player's behaviour, is the player's tennis conscience. If he is to play tennis, he will play tennis, not pat-ball. This determination of his will not normally interfere with any projects that he may have built upon the game. The more truly he plays tennis, the better he plays; the better he plays, the more likely he is to win the game, to get his exercise, etc. Normally there is perfect harmony; but occasionally, exceptionally, there is trouble. The player finds himself indignantly turning away from tactics which would bring certain victory—why? Because, he would probably say, they are not his idea of tennis. Now, considered with reference to victory or any other end pursued in the game, this diversion necessarily appears as a limitation of the means by which they may be secured. The end is not denied, but its ability to justify these means is denied. Thus it is an insistence that an act shall be done in a certain way, a specification of conditions positive and negative. It makes its presence felt as limiting the activity, just as the law of the land enters occasionally as a limit and determinant into the lives of its citizens.

This is how it inevitably appears to one concentrated on the issue and the result. But what is it? and what is its title to interfere? We have already seen what it is, and we have already vindicated its title. The man is actually playing tennis, and the basis of the interference is simply the recognition that this is what he is doing, and the demand, naturally associated with it, that he shall really and truly do it. There could be no simpler or more fundamental consideration. For though as an explicit factor in decision the conception of tennis playing may be an occasional and intermittent visitor, yet no proof or apology is required surely for the thesis that this conception is really the basis and foundation on which all the rest is built. This is the root from which the fruits to which

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our purposes are directed spring; and if the root is poisoned or cut away, the fruits will soon fail and wither. It is not truly our purposes that are interfered with; they are at best intermittent, dependent on circumstance and opportunity. It is the activity that is the constant factor and continuing form, and it is this that occasionally is endangered by the material in which it finds embodiment. On such occasions the activity asserts itself in self-defence against the danger of self-mutilation or suicide under pressure of events.

What I wish to maintain is that the basis of moral judgment and the root of moral values is a similar but quite general conception of will and action as a continuing form finding its changing embodiment in the changing situations of life; that such a conception is at the foundation of all effort and every purpose, however rare may be the proofs it gives of its existence in the familiar form of scruples of conscience or of exactions in the name of duty which can be traced to not other source. Here alone, I would argue, is the unity we were seeking to be found—so much unity, at least, as is to be reached by a finite being in his finitude. It cannot be found, as we have seen, in any end; nor can it be found at any point in the changing states of the self or by any abstraction from them; but it can be found here because this is a universal necessarily finding application in every least portion of conduct. This conception is obscurely at work in human life from its lowliest beginnings, shaping and guiding desire and affection, and at work equally in the highest reaches of human genius and heroism. In all action there is effort, for effort is the law of life; but the conception provides a criterion by which the effort may be justified in itself, not merely for what it brings. There need not, however, be conflict, as when conscience is said to make us cowards or duty to fall out with desire. Such internal conflicts, however frequent they may be, spring from avoidable defects, and are therefore pathological. It is the most serious surrender of the true claims of morality to give in to the popular error that morality is involved only where such conflicts exist; but it would be even more fatally foolish to deny the reality of these conflicts and their vital importance in the life of the individual. And if all this is right, the task of the moral philosopher is simply and sufficiently defined as that of defining this conception of action and its applications. He will have to show how out of its collisions with the circumstances of life arise our distinctions of good and bad, of right and wrong, of duty and desire, and all other familiar features of the problem of conduct. Further, if he is to remain true to the name of philosopher, he will have to show also the relation between these moral values and others which the human spirit is no less concerned to maintain.

With the wider issues I am not now concerned. I must be content

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with indicating in this cursory way that for me too they exist. One thing only remains, by way of conclusion, for me to do—to relate what I have said to the problem stated at the outset and show how, to my mind, it relieves it. We begun by recognizing two kinds of value relevant to action: those which a spectator will assert an action itself to possess when he calls it a good or fine action, and those which an agent credits to things round him when he shows an active preference, *e.g.*, for a tidy over an untidy room. I took an example of conflict in which the agent is supposed to modify a course of action which he had already begun and felt inclined to continue, not because of any flaw in the original calculation, but as we say for some moral scruple. This scruple was supposed to be occasioned by an act of imaginative self-judgment in which he regarded himself as from without and saw that his action was not good. But this we felt could not be the normal and characteristic expression of the moral principle. For how much better if he had been directly inclined by his natural benevolence to the right course of action instead of being indirectly forced into it by the fear of self-condemnation! Are we to think, as some moralists have thought, that it is the fear of the pains of self-reproach or the love of the delights of self-approbation that makes men moral? Every unsophisticated mind will be against us here, and will agree rather with Marcus Aurelius in preferring the man who "has no conception that he has done anything whatever, but may be compared to the vine that bears her grapes and seeks nothing more when once she has done her work and ripened her fruit." "A man who has done a good deed," he says, "should be like a horse that has run its race, a dog that has tracked its game, or a bee that has gathered its honey."

Now the question of the kinds and modes of self-consciousness is much too large a question to introduce at the tail end of a discussion like this. But I may remind you that those very Stoic philosophers, from whom Marcus Aurelius learned thus to prize unself-consciousness in well-doing, themselves insisted that self-consciousness was of the essence of morality. So that clearly some distinctions are necessary here. In the meantime surely the conception at which we have arrived does throw some light on the matter. There are these two sets of values, no doubt, but neither of them is ultimate. They are only two manifestations of something more fundamental, of the demand of action that it shall complete its nature and justify itself. The fact of conflict and hesitation does certainly show that this completion is not reached; and the victory of right, however creditable, does certainly imply a possible better state in which right would have had no opponent. So far the earlier interpretation is confirmed. But this better is not something better than morality:

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is morality itself. For the judgment of oneself in action which is of the essence of morality is not a judgment of praise and blame, in which a man sees his own acts with the same eyes as those of his friends, and rejoices or despairs accordingly, making all allowances for defective equipment and restricting circumstance; it is something far more persistent and exacting than that, and much less respectful of existing fact. It is the tormenting consciousness of a stricter logic, a higher level of execution, always within reach if the spirit is willing, which leaves no room for rest or contentment, but yet justifies the act so far as it succeeds in pressing its claim. It is not egoism or altruism; it is no thought of self or others, or of the relation between them. But it may take Spinoza's name, the *conatus in suo esse perseverandi*, "the effort to persevere in one's being": for he who is committed to living is committed to living as well as he can.

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THE PHYSICAL WORLD

LESLIE J. WALKER, M.A.

SIMPLICIUS, writing in the sixth century, distinguishes physical science from astronomy on the ground that, whereas it is the function of the physicist to "inquire into the nature of the heavens and the stars, into their potentialities, their quality, their becoming and passing away," astronomy has no competence in questions of this primary character. Its function is "to determine the order of the heavenly bodies, their figures, magnitudes, distances from the earth, sun and moon, their eclipses, conjunctions, the quantitative and qualitative properties of their motions," etc. For this purpose it requires arithmetic and geometry, but cares not how the heavenly motions be described, whether in terms of excentrics or epicycles, so long as the appearances can thus be accounted for.

Aristotle in the third century B.C. makes a similar distinction between the function of the positive sciences and the function of physics, which he regards as a branch of philosophy; and in Thomson and Tait's *Treatise on Natural Philosophy*, first published in 1879, and for long regarded in this country as the standard work on Physics, the distinction still holds good. "The term Natural Philosophy," we are told in the preface to this work, "was used by Newton, and is still used in British Universities to denote the investigation of laws in the material world, and the deduction of results not directly observed." It is preceded by the "observation, classification, and description of phenomena," which constitutes an earlier stage which might, here as elsewhere, not inappropriately be called "Natural History." Physics, for Thomson and Tait, as for Aristotle and Simplicius, was a branch of philosophy. Its scope, as conceived by its present day exponents, and notably by Professor Eddington, is much more limited. "Whenever we state the properties of a body in terms of physical quantities, we are imparting knowledge as to the response of various metrical indicators to its presence, *and nothing more*," says Professor Eddington.[1] Physical science still uses arithmetic and geometry, now more so than ever, but, like astronomy in Simplicius's day, it does not inquire into the nature of that which is measured by metrical instruments, or into the significance of the geometrical theorems and mathematical principles which it finds useful in co-ordinating the measure-numbers read off when instruments respond to objective stimuli. It has withdrawn

[1] *The Nature of the Physical World*, p. 257.

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its claim to provide knowledge of the intrinsic nature of things, and so has ceased to be a branch of philosophy. None the less the old question as to objective significance and intrinsic nature may still be asked, and to it there should be an answer, if Professor Eddington is right in thinking that "the continual advance of science is not a mere utilitarian progress, but progress towards ever purer truth." In his Gifford Lectures for 1927—now published under the title of *The Nature of the Physical World*—Professor Eddington outlines the answer to which modern science in his opinion points. In the interests of philosophy, therefore, it will be worth our while to examine carefully both the conclusion and its premisses.

The answer that most physicists would have given as to the nature of physical reality some twenty years ago is that the substantial object that I see before me and call a table is in its solidity and its substantiality largely a myth. The qualities that I perceive as belonging to it are the product of its action upon my organs of sight and of touch. They qualify not the table but the way in which I, as a sentient organism, react to its presence. The real table comprises "numerous electric charges rushing about with great speed, but their combined bulk amounts to less than a billionth of the bulk of the table itself," so that in reality my writing-paper rests not on something solid, but "is poised as it were on a swarm of flies and sustained in shuttlecock fashion by a series of tiny blows from the swarm underneath."[1] The view taken by the physicist of to-day is somewhat different. Upon further reflection he has come to recognize that if the qualities which we perceive in physical objects are in large part the product of perceiving minds, so too are the properties which science ascribes to physical objects in large part the product of thinking minds. The famous laws of conservation of energy and momentum are mathematical identities, violation of which is unthinkable; but they are not controlling laws of nature itself, for they are due to the way in which the quantities obeying them are built, and it is *we* who have done the building. Statistical laws, which form a class apart, are based on the notion of *a priori* probability, which again is a factor introduced by mind in its attempt to devise appropriate formulæ for the co-ordination of pointer-readings. It is mind, too, that constructs the geometries amongst which the physicist makes choice. To the simpler elements which the mathematician uses in building them there is no counterpart in the world of everyday experience.

The mind, in short, "has by its selective power fitted the processes of Nature into a frame of law of a pattern largely of its own choosing; and in the discovery of this system of law the mind may be regarded

[1] *Op. cit.*, pp. xii–xiv.

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as regaining from Nature that which the mind has put into Nature."[1] There are, indeed, certain laws which seem to constitute an exception, namely the laws of atomicity and of quanta; but even if *die ganzen Zahlen hat Gott gemacht*, it would still seem that *alles anderes ist Menschenwerk*. "The determinism of the physical world simply reflects the determinism of the method of inference," and "anyone who studied the method of inference employed by the physicist could predict the general characteristics of the world that he must necessarily find."[2] The success of the method—"the submission of so large a proportion of natural phenomena to be brought into the prejudged scheme"—he could not, of course, have predicted; but if phenomena be but nerve disturbances between which and physical things there is no resemblance, if of "the fibres which run into consciousness from an external world," it is only our own end that we know, if what we ascribe to the external world be but the product, in part of image-building, hereditary and instinctive, in part of scientific comparison and reasoning, erected on this basis, then of the external world itself the most we can say is that it exists as the unknown and unknowable background which stimulates sentient activity and thought.

To most minds this position is as unsatisfactory as is that of the Kantian *ding an sich*, and various ways of escape have been tried. Thus Mr. Bertrand Russell advocates a causal theory of perception. Between what occurs before perception in a perceivable object and what occurs in us when we perceive there is causal continuity. But unless the effect resemble the cause, it is difficult to see how in the resultant 'percept' we can be said to acquire knowledge of the happening in which the causal chain originates; and Mr. Russell postulates no such similarity, but, on the contrary, affirms that "what occurs before light reaches the eye is presumably different from what occurs afterwards, and therefore different from a visual percept." In Professor Whitehead's view there is no question of an unknowable background, since he denies that the bifurcation of experience into perceiving minds and a physical world which exists independently of them is legitimate. All that exists and all that is possible falls within experience. For philosophy the problem is not how objects come to fall within experience, but how within experience they are in point of fact related.

The conclusion reached by Professor Eddington is somewhat similar, though he approaches it by a very different route. He agrees with Mr. Russell that there is a physical world which is the cause of our perceptual experience, and cites with approval Mr. Russell's statement that "what the physiologist sees when he examines a brain is in the physiologist, not in the brain he is

[1] *Op. cit.*, p. 244. [2] *Op. cit.*, p. 271.

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examining." Our 'percepts' do not qualify the physical world, nor yet do they resemble or manifest physical quantities. They appear to qualify objects, but science has shown that this is an illusion. They are but images built by ourselves and our ancestors. In the intellectual order we then build theories in order to account for the manner in which they occur, and the way in which they are associated with those other images which we call the pointer-readings of scientific instruments of measurement.

Subjectivism would seem here to be complete, so much so that one wonders why, if what the physiologist observes in a brain is not really there but is merely in his own mind, his treatises should still be classed as science rather than as fiction. Professor Eddington, however, is not content with this Subjectivism. He not only affirms a physical background, but affirms that it is knowable to mind, and ascribes to it certain properties deduced from the nature of that experience of which it is alleged to be the cause.

"Knowableness to mind" is the first property assigned to the physical world, for it is this which "differentiates the actual world of our experience from imaginary worlds in which the same general laws of Nature are supposed to hold true."[1] Unreal stars emit unreal light which gives rise to unreal brain-disturbances, but it is only the real brain-disturbances that are "translated into consciousness." Perceptual consciousness is here meant, we may presume, for the thought of unreal worlds is also supposed to be conditioned by brain-disturbances, and, when we think of them, these disturbances also are 'translated into consciousness.' Unreal worlds enter into consciousness, but it is only the real or actual world that enters into perceptual consciousness. The actual world then is such that it can come to be known by way of perceptual experience.

The physical world is a knowable world; and though the function of physical science is not to give us knowledge of it, it is possible to draw from physical theories certain conclusions as to what the nature of the physical world must be. It seems clear, for instance, that the fundamental laws governing the physical world are atomistic; that processes in the physical world have direction in time; and again, that time is finite at both ends, *i.e.*, that, as it had a beginning in which the distribution of energy was highly erratic, so also it will reach a final state in which temperatures will all be equal and the distribution of energy everywhere uniform. From recent developments in the Quantum Theory it is also possible to infer that the laws even of inanimate nature are not deterministic. Even had we a complete knowledge of the state

[1] *Op. cit.*, p. 265.

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of an atom at a given moment and of the laws governing its behaviour, it would be impossible, Professor Eddington assures us, to foretell with certainty what that atom was going to do. The odds that ought to be laid on one of its electrons making a particular jump can be specified, but that is all. As with horses, so with electrons, that which we have laid odds on their doing they do not do, and apparently for no reason whatsoever.

This information about the physical world, if it be reliable, is certainly interesting; but it does not carry us very far: of the intrinsic nature of the atom it tells us nothing. Whence Professor Eddington draws the comforting conclusion that nothing we affirm on other grounds of the nature of the physical world can possibly be contradicted by genuine science. The physical atom, like everything else in physical science, is but a "schedule of pointer readings." But, argues Professor Eddington, "in one case—namely for the pointer readings of my own brain—I have an insight which is not limited to the evidence of the pointer readings. That insight shows that they are attached to a background of consciousness. . . ." Hence, "if we must embed our schedule of indicator readings in some kind of background, at least let us accept the only hint we have received as to the significance of the background, namely, that it has a nature capable of manifesting itself as mental activity."[1]

As a theologian one might be tempted to welcome these conclusions, especially as Professor Eddington sees no reason why we should not identify the mental activity which thus manifests itself with that of God, and from the indeterminateness of the material world infers that there is no reason for denying either God's providence or free will. Yet there remains an uneasy feeling that there is a fallacy somewhere. Undoubtedly "thought is one of the indisputable facts of the world." Undoubtedly, too, "I know that I think, with a certainty that I cannot attribute to any of my physical knowledge of the world." But when I think, I recognize, as Professor Eddington points out, that a collection of atoms and electrons and fields of force arranged in space and time, and again other physical characteristics, such as energy, temperature, entropy, are *not* identical with thought, but are its objects. It would seem then that I do know something of the nature of atoms and electrons and other physical entities, however little it may be, and that just enough for me to recognize that it is incongruous to suppose that they themselves should "constitute a thinking object." Professor Eddington agrees. Consequently, from the fact that in the only case into which we have an insight, the background of pointer readings is known to be consciousness, he does not infer that the

[1] *Op. cit.*, pp. 259, 260.

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background of all pointer readings is consciousness, as one would have expected. He infers merely that it is a mind-stuff, which, though "not spread in space and time," nor yet "altogether foreign to the feelings of our consciousness," is yet differentiated into parts which only here and there "rise to the level of consciousness."[1] In other words, he takes the only hint we have half-heartedly; and having first divorced thought from consciousness on the ground that it is alleged by psychologists that we sometimes unconsciously think, he proceeds to assign thought as the unconscious background of all things that are without brains, and conscious thought as the background of those which have them. But in so doing he ignores two factors which surely are relevant to the situation, namely the fact that the background into which we have an insight consists not of unconscious, but of conscious thought, and again the fact, which he himself admits, that electrons and atoms and entropy and such like physical objects are plainly not identical with thought.

But does science offer us no further hint as to the nature of objects in the physical world? Professor Eddington answers in the negative, because he assumes that the qualities which we perceive in the physical world are in reality not there, but characterize our own brains. Whence it follows that what science co-ordinates by means of mathematical formulæ and space-time frames is not something which exists whether we perceive it or not; it co-ordinates but the reactions of our sentient organisms. But a difficulty now arises, for science does not seek to co-ordinate merely "the data of our own spasmodic observations." It seeks to co-ordinate all that is observable, and this includes "a great deal that is actually unobserved," the moon, for instance, and the stars when nobody is looking at them. In order to provide science, therefore, with a sufficiency of data, Professor Eddington has to postulate "an infinite army of watchers and measurers," who from moment to moment "survey everything that can be surveyed, and measure everything that can be measured by methods which we ourselves might conceivably employ."[2] That one should be forced to adopt so doubtful an expedient in order to save a situation created by a particular theory of perception is sufficient evidence that this theory, long since discarded by most philosophers, cannot be sound. That something happens in our brains when we perceive is credible enough, but we certainly do not perceive anything happening there, unless indeed it be a headache. We perceive events happening and qualities existent in the world about us, and to this world belong alike the brains which physiologists examine and the pointer readings which physicists observe. To assume that what we see

[1] *Op. cit.*, pp. 276, 277. [2] *Op. cit.*, p. 226.

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happening around us in reality happens to our own brains, and thence to infer that all perception is illusion, is not only to contradict the data of perceptual experience, but is to obliterate the distinction between false perception and true, and to reduce physic science to a particular branch of psychology. Perceptual data te us little of the nature of the physical world until they have been critically examined and elaborated in thought; but, as they present themselves, they characterize the physical world, and have to do with our unobserved brains only in so far as we are constrained to postulate the latter as a condition which makes human experience possible.

Einstein's view of the function of physical science is more objective. He is concerned with a physical world that exists whether we perceive it or not, and has a structure the nature of which it is the business of the physicist to discover. Geometry discusses the nature of various structures, but not all geometries are suited to the description of physical space and what happens in it. We must choose the right one, *i.e.* must choose that one in which ideal configurations are related as are the changeful configurations of existent bodies in the physical world. When so chosen, geometry becomes, in Einstein's opinion, a natural science. In fact, it may be regarded, he says, as "the most ancient branch of physics." To distinguish this physical geometry from "purely axiomatic geometry," he calls it 'practical geometry,' and urges that "the question whether the practical geometry of the universe is Euclidean or not has a clear meaning," and that "its answer can only be furnished by experience."[1]

To this question Einstein found the answer, in part at least, in his General Theory of Relativity. The structure of physical space conforms to a general type, called Riemannian, which includes the type discussed in Euclidean geometry as a limiting case. In regions remote from massive bodies the structure of space approximates to the Euclidean ideal, but in the neighbourhood of massive bodies it deviates from this ideal to an extent which depends in part upon the mass of the body which it surrounds, and in part upon its proximity to that body. The structure of space, therefore, is not only different in different regions, but also it is variable; for massive bodies are not stationary, but move relatively one to the other; and, as they move, the structure of the space surrounding them changes. The structure of space, therefore, varies with time. Hence, in order adequately to describe it, we require four dimensions instead of three. This does not mean, however, as some exponents of the Relativity theory has asserted, that time and space become indistinguishable; for, as Eddington points out, "we recognize in

[1] *Sidelights on Relativity*, p. 32.

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the Relativity theory something called a *temporal relation* which is absolutely distinct from a spatial relation." It signifies merely that if we would envisage the physical universe as a whole, we must envisage it as extended in time as well as space, *i.e.* as a four-dimensional whole, the structure of which differs as we pass from one three-dimensional cross-section to another.

Viewed historically, this conception of space and time marks at once a return to an older theory and an advance upon it. The concepts of space and time that prevailed in the Middle Ages from the eighteenth century onwards were those of Aristotle, by whom space was regarded as a plenum, co-extensive, because in the concrete identical, with the totality of all existent and extended bodies. There is no empty space either between bodies or between their parts; nor yet are there two sets of dimensions, one pertaining to space and the other to the bodies that move about *in* space. The structure of space and the structure of the extended bodies that fill space is one and the same. Similarly time was held to be identical in the concrete with motion and continuous change. Moreover, from this the inference was drawn, alike by Porphyry in the third century, by Aquinas in the thirteenth, and by the Jesuit writer, Toletus, in the sixteenth, that *in nature* there are as many times as there are motions.

In both these respects the Relativity theory returns to the Aristotelian position; but in the meantime much has happened. Descartes introduced an analytical geometry in which the parts of space are treated as points, the position of which can be assigned by a co-ordinate system. He introduced also a further modification into the Scholastic theory of space, in that, while still identifying it with extended matter, he ascribed condensation and rarefaction to the motion of *certain* parts of matter which, within the whole, approach or recede from one another. There thus arose a distinction between the parts of matter which move and the parts which don't. In Newton this incipient dualism becomes acute. Matter is taken clean out of space, which henceforth becomes a background, absolute, eternal, changeless in structure and infinite in extent; while the parts of matter are connected up by lines of force, which together form a kind of second space, superimposed upon the first, and known as the gravitational field. Similarly time is divorced from motion and made absolute; with the result that, instead of time being conceived as the measure of motion, expressed in terms of a number, in Newtonian theory it is motion that measures time.

With the discovery of electro-magnetism this dualism becomes yet more pronounced, for in addition to the gravitational field we now have, superimposed upon absolute space, an electromagnetic field as well. It is, moreover, a real field, so Faraday assures us,

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with real lines of force radiating outwards from every charge, to be brought to a focus again in charges of an opposite kind. We thus have three systems of points connected by lines, each of which is supposed to be real: an absolute system in which there are everywhere points connected everywhere by lines, and always in the same Euclidean way; a relative system in which massive points are connected everywhere by lines of force, but in a different way according as the massive points change their position with respect to the absolute points, which remain eternally the same; and a further system, also relative, in which for massive points are substituted points bearing electric charge, and a further set of lines is called into being in order to connect them, which is subject to much the same kind of variations as the second set.

It could scarce be expected that this threefold space would endure, even in science, if indeed science be in search of the truth about physical reality, and it has not endured. In the Relativity theory the space which comprises massive centres connected by lines of force becomes fused with the space that Newton regarded as its background; and in the further development of this theory, due to Eddington, Wehl, and now to Einstein himself, the space introduced by electromagnetic theory, becomes fused with the other two. The result is that once again we have one, and only one, physical space, a space that is identical with that which fills it, and has identically the same structure, and a space that is finite, not infinite, even as in all these respects it used to be prior to Newton. Time, too, has once again been fused with motion, with the result that we have *prima facie* many times, which it is more difficult than it used to be to co-ordinate, yet not impossible. And withal we know far more about the geometrical structure of space than Descartes did, and in particular know that it cannot be everywhere Euclidean, since this would be to make it the same everywhere and so invariable, which it cannot be if it is dependent upon moving bodies.

Undoubtedly "we have turned a corner in the path of progress," a corner that enables us to view from a different angle the once discarded theories of the past. But the end is not yet in sight. The Quantum theory in its many ramifications has shown that "there is something radically wrong with the present fundamental conceptions of physics," says Professor Eddington, and as yet "we do see how to set it right."[1] Space, or, if you prefer, that physical something which fills space and is identical with it except for abstract thought, has shown itself to be not only finite in extent, but also finite in divisibility, the limit imposed upon its divisibility being dependent upon a quantity which is the same everywhere,

[1] *Op. cit.*, p. 179.

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and is known as the quantum, h. At present attempts to solve the problems which this fact presents are based on the theory of probabilities and on a mathematics, devised by Hamilton, in which pq is not necessarily equal to qp. Professor Eddington suggests that the applicability of probabilities to the physical world implies indeterminism; yet, when we say that the known chances of an electron making a particular jump are four to one, it may mean merely that, for reasons unknown to us, on the average in four out of every five atoms an electron does make in fact this jump, and in one it doesn't; in which case the indeterminism in question characterizes not the physical world, but our present knowledge of it. Nor does the applicability of Hamiltonian equations help us much, for what they signify in the physical world nobody as yet knows. The structure of space, of gravitational fields, and of electromagnetic fields, can all be expressed in terms of the same geometry, and the behaviour of their parts summed up under the same set of formulæ. But the structure and private life of the atom constitutes a region to which our geometries have thus far proved inapplicable.

One naturally asks why; and the history of science, if we look back upon it, suggests what may possibly be the correct answer. Descartes did not hold that matter is infinitely divisible, but when he sought to express its structure in terms of an analytic geometry, implicitly he made this assumption. There is no need in geometry to assume that points are without magnitude and without parts, for they can be defined in terms of their relations one to another; but ordinarily this assumption is made, since it is supposed that in a line, surface, or volume, however small, there exist an infinity of points. But if the material of the universe is not infinitely divisible, as quantum phenomena seem plainly to indicate, a scheme in which position is assigned by means of points and in which velocities are ascribed to point-instants, is too refined to fit the coarse-grained structure of the physical world in which we live. Small wonder, then, that in the Quantum theory, in proportion as position is made definite, velocity becomes indeterminate, and *vice versa*. Real points are not without magnitude, nor are real instants without duration, for both magnitude and duration characterize everything that presents itself as a constituent of the physical world, however small it may be. It would seem, then, that what we need is not a geometry of points, but a geometry of particles, finite alike in magnitude and in number, however great that number may be. In themselves they will be in no wise different each from the other, but together will form a whole—without interstices, since where they are not there is nothing that pertains to the physical order; and this whole will be differentiated according as the particles are ordered

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or arranged with respect to one another, and in particular with respect to those particles about which the arrangement is different from what it is elsewhere; I mean those particles which we call electrons or protons when they occur singly, atoms or molecules when they occur in small groups, and crystals or colloids, or again earths, planets, and stars, when they occur in yet larger and larger groups. A geometry that will apply to the macroscopic has apparently been found, but a geometry that will fit the microscopic has yet to be devised. When it has been devised, if I read aright the lesson of history, there will be no differentiation in its elements, *i.e.* its 'points' and their primary relations; but all differentiation will be due to structure or form, as used to be said of old. Descartes made an immense contribution to science when he invented a co-ordinate geometry; but in more than one respect he led us astray. He discriminated between parts of matter which move and parts which do not; he supposed the structural arrangements of the parts to be everywhere the same and everywhere Euclidean; and, in assigning position, he treated the parts as extensionless points. On the first two counts the Relativity theory has set us right; but in respect to the third we still think and reason Cartesianwise. Yet the assumption that there exist extensionless points, however useful it may have been so long as we were concerned only with the macroscopic, cannot possibly apply to the microscopic, if in fact there be a limit to divisibility, and if the ultimate part in reality function as a unit.

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THE RELATIVITY OF FREE WILL

THE RT. HON. SIR HERBERT SAMUEL, G.C.B., G.B.E., M.P.

I WAS led to philosophy by politics. There can be no foundation for political action except in ethics; and there can be no foundation for ethics except in some form of metaphysics, whether religious or other. And one cannot travel very far along the philosophic road—particularly if one has in mind the need of arriving at some definite destination—without finding as an obstacle the perennial problem of Free Will. It is an obstacle which has somehow to be crossed. It cannot be evaded or ignored. The man who is dealing with public affairs—with the principles of Criminal Law, for example, or with the factors that make for peace or war, and indeed with any of the major questions that confront our society—if he tries to think things out, is faced constantly by the problem of individual human responsibility; just as the man of religion is faced by it constantly.

THE ANCIENT PROBLEM

The human mind cannot escape from the principle of causation. We cannot escape from the belief that anything which exists or occurs is the result of causes that preceded it in time. The philosophies of Creative Evolution and Emergent Evolution may sometimes attempt to show a way of escape, but to the lay mind they do not appear to succeed. One may accept much of the vitalist position without accepting as a consequence that life itself and its manifestations are exempt from causation. It would be an obvious fallacy to say that because life and thought are different from matter, and matter is subject to the law of causation, therefore life and thought are not subject to the law of causation. To argue, convincingly, against materialism is not to argue against causation. And it would be a fallacy almost as obvious to say that because the causes which move living beings operate largely from within, and the causes which move inert things operate mainly from without, that therefore the first set of causes are spontaneous, while the second are the outcome of other causes that preceded. Further, when the school of Emergent Evolutionists remind us that the universe is continually producing things which are new, and different, and unforeseeable by man, they do not prove that these things are uncaused. To take the illustration that is often given—hydrogen and oxygen combine to produce water; and no one could have predicted from the qualities of the gases that something would emerge from them with qualities

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so entirely different as those of water. The fact remains that it is always water which is produced. When you mix two parts of hydrogen and one part of oxygen and explode them, you always get water, and not sometimes water and sometimes, let us say, a piece of paper and sometimes a rabbit. The suggestion that one of these other things might be the outcome is at once seen to be preposterous, and even silly, so absolute is the certainty that things are the result of causes, and that like causes must produce like results. Again, it is difficult to understand why the school of Emergent Evolutionists should lay emphasis on the fact that many phenomena, which appear as novelties from time to time, are "unpredictable." Because the causes of them are not recognized and the effects cannot be foreseen, it does not follow that there are no causes and that these phenomena are not effects. It would be a piece of human arrogance, of which no one would be guilty, to declare that if we cannot trace a connection there is none, that what mankind does not know cannot be.

Let us start, then, by accepting, in its essentials, the determinist position, and let us recognize, without qualification, that human conduct can no more be exempted than anything else. How can we reconcile this principle with the fact that we do choose between this and that every moment of the day? And does it follow, as is usually supposed, that if determinism is once accepted, fatalism must be accepted as the consequence; that individual men must be regarded as nothing more than flotsam on an ocean of events, rising and falling with the tides, drifting with the currents here and there? Are we reduced to saying that a man does virtuous things or criminal things because he must and not because he wills? In a word, does morality disappear, wiped out by a blind necessitarianism?

I do not believe that these consequences need follow. There may be a reconciliation between the fact of determinism and the fact of human responsibility.

Personality

A steamship, as she leaves the building-yard on her trial trip, is the product of an immense number of causes. There is the work of the designers and the workmen in the yard; of the makers of the materials which have been brought there; and of the makers of the machines which have produced the materials, and so on in an endless chain. There have been mental processes in the minds of the capitalists who have ordered the ship, and in the minds of the owners of the ship-yard, and in the minds of all others who have had an influence in the matter. The ship is the outcome of all these causes. But she is very different from a mere sum of the products of those

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causes, and very different from a mere accumulation of the materials of which she is made. As she leaves the yard, she is a new and distinct entity. She is a ship. As she sails the seas with her officers and crew, she can face the winds; she can carry her passengers and cargo north or south, east or west. She becomes the origin of a whole series of new consequences. None the less she is herself the product of definite causes, and the character of the work she can do is determined absolutely by the character of those causes. So a human personality is a product of prior causes, and the character of its actions is determined by their character.

Each of us has qualities of body and mind which we have inherited from our ancestry. If our ancestors had not been human beings, for many generations we should not be human beings. If our ancestors had been negroes or Mongols, we should be negroes or Mongols. Each of us has been moulded also by the influences that have surrounded our childhood—by the home and the school, by friendships and enmities. Each has been affected by economic conditions—our occupation, our wealth or our poverty; by physical conditions—the climate of the country in which we live, the standard of sanitation, the food that we eat; by human environment—the characteristics of the neighbourhood, of the town or village, of the nation.

The causes that have shaped us are incalculable in their number. Any man may have had a million persons among his direct ancestors in the last thousand years, and he may have inherited characteristics from any one of them. The separate influences which have affected him on every day that he has lived may be numbered by thousands. And each of these in turn has been the outcome of earlier influences, and those of earlier ones still. They spread out, and they stretch back through time, beyond the range of computation and even of imagination, Yet these causes have existed. If any one of them had been different, the man would be different, in however minute a degree. If all of them had been different, the man would be wholly different.

Each human personality, then, is the outcome of hundreds, thousands, millions of causes, crowding upon each other and intermingling; sometimes reinforcing one another, sometimes in mutual opposition; some powerful, some weak; some beneficial, some harmful. Each personality is the centre of an immense sphere of influences, which, coming from all directions and acting at every moment, make him what he is, lead him to do what he does.

But just as the ship is something very different from a heap of steel and timber, so a person is something very different from a mere bundle of effects. The effects are there, but they have been built or fused into a new entity. There is nothing there but the product of prior causes; yet that product becomes itself a cause of other effects.

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On to that centre have been focussed innumerable agencies; from it emanate in turn, radiating in every direction, innumerable activities. The person exists; he thinks; he chooses; he acts. The prior causes, through the human personality, transmit their effects in a new form into the future.

A Fresh Start

In practice, human beings in their relations with one another are obliged to treat each person as though he were, so to speak, a fresh start. When we watch the ship at sea we do not trouble to recapitulate all the processes which brought her into being, although we should know quite well, if we thought about it, that she is the product of those processes and of nothing else. We say—there is a ship; of a certain tonnage, with a certain speed, able to do certain work. And when we meet a friend in the street we do not stay to analyse the causes which have made him what he is: the evolution of the earth through geological time, the emergence and the development of the human race, the course of our national history, the characteristics of our friend's family, the education and the other influences which have moulded his own character. We say—here is John Smith. We carry on our relations with him from that as a starting-point.

So also when we examine the workings of our own minds. The character which we carry within us is as much the product of prior causes as anything else. But in practice we treat it, and are obliged to treat it, as an independent entity, as a thing in itself.

And this is plainly because the influences which have created it are so enormous in their number, so infinitely complex in their relationships, and so incalculable in their results, that it is not practicable to take any other course. When we make a choice we are compelled, as a general rule, to treat that act of will as though it were something spontaneous, original; as though the mental process from which it is the direct and immediate outcome were the absolute cause of it. And this is right. Life could not be conducted on any other terms.[1]

The Relativity of Free Will

If this position is accepted, we may reach a reconciliation, in this sphere, between philosophy and common sense. Dr. Johnson, speaking in this instance, as in many others, for the man-in-the-street, once exclaimed: "Sir, we *know* the will is free and there's an end on't." In the same way, through all the ages of human history until the

[1] To those who are familiar with Professor Vaihinger's pregnant work, *The Philosophy of 'As If,'* it will be clear that this conclusion is similar to that suggested by him. (See especially pp. 43–5 of the English translation and the quotations from Kant's *Grundlegung zur Metaphysik der Sitten* on p. 257.)

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time of Copernicus, men knew that the sun went round the earth; they could see it doing so. In the same way we know that we are stationary when we sit down, and we know that our bodies consist of solid flesh and bone. Yet all the time the earth has, in fact, been going round the sun; however placidly we may be sitting, we are, in fact, travelling through space a hundred times faster than the speed of a rifle-bullet; our bodies are, in fact, made up of innumerable and infinitesimal electric charges revolving with incredible rapidity. But these things do not trouble us. We conduct our lives on the basis that the sun rises and sets, that we are able to sit still, that our bodies are solid. So also we conduct our lives on the basis that the will is free.

And those conditions are real—*for us*. Here also the essential principle of Relativity applies. It need not be limited to Physics. Psychology and Ethics are also within its range. We carry our own "Frame of reference" with us. Just as we view the physical universe from the standpoint of our own planet and measure it with our own terrestrial instruments, and must make allowances for that when we strive to know the universe, in some measure, as it really is; so also, in such a matter as free will, we must make allowance for the condition that our outlook is from the standpoint of our own selves, and that our conclusions can only be relative.

Does it follow that free will is merely an illusion? I suggest that that is not the right term. The daily movement of the sun is pure illusion, but the appearance and disappearance of the daylight is *for us* a fact. When we sit down there is, in fact, *for us* a condition of rest. The solidity of our bodies is *for us* a reality, as we find if they collide. So too the power of choice is *for us* a fact. On the plane of the universe, and from the standpoint of the philosopher, things are determined; on the plane of daily life, and from the standpoint of the ordinary man, there is free will.

Consequences in Human Activity

I said that we are obliged, and accustomed, "as a general rule," to treat an act of will as though it were something spontaneous and original. But we need not, and we do not, do so always. Where we can succeed in disentangling one influence from the rest and identifying it as the cause of particular actions, we often do that. And important results follow.

For example, if a crime is committed, and if it is found that the culprit was mentally diseased, we treat him differently from the way in which we should have treated him otherwise. If, to take a wider illustration, it is shown by experience that people who have received a general education, or who have had a good moral training, conduct

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themselves better than people who have not, we set those influences to work on the children of succeeding generations, with the expectation that they will have their effect in the actions which they will choose to do. Indeed, while the mass of mankind declare their belief in a freedom of the will which is absolute, which enables each man to arrive at decisions that are original, spontaneous, undetermined by prior causes, their actions show conclusively that they believe nothing of the sort. For if such were the conditions, what would be the use of the training of infants, or of school education, or of religious discipline, or the inculcation of good habits of any kind? Why should we attach any importance to eugenics? With it all, each individual would act in the same way as without it.

We do, in fact, dimly recognize that, while we cannot trace the effect of all the vast complex of causes that determine character, we can here and there trace the effects of some of them. It is for that reason that we try to set on foot those agencies which will influence character, and therefore influence the choice of actions, in a way that will benefit the individual and the society.

The position, therefore, which I am seeking to defend is not fatalist; it is the very opposite of fatalist. It recognizes that man's activities are the results of causes, but it recognizes also that among those results is a capacity to set on foot other causes, which in their turn will achieve, for good or for ill, further results. It does not deny the existence of "intelligent foresight and purposive striving," but it regards these also as consequences of what has gone before. Reason and purpose come into the chain of phenomena, but not as origins; they come in at a later point. Since, however, emphasis is laid on the principle of causation, the doctrine, if it were generally held, should lead, not to a fatalistic apathy, but to a more intense activity, designed to ensure that the causes which will mould the future shall be as beneficent as they can be made.

If the objection is raised that, according to this very doctrine, the future will be as it must be, and that therefore we may as well be apathetic as active, the answer is that the first of these statements is true, but not the second. The future will be as the causes operating in the universe will make it; but we are ignorant, in the main, of what those causes are; we cannot predict what the future will be; and among the causes which will make that future, our own capacity for activity, which has been evolved from the past, is as authentic and as integral a part as anything else.

"Fate is unpenetrated causes," said Emerson. "Character is destiny," said Heraclitus. The more we can penetrate to the causes of things, and the better we can mould character, the greater will be our control over human fate and the finer the destiny to which the race and the individual can attain.

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Consequences to Religious Thought

The conception of the Relativity of Free Will has a bearing, and not an unimportant bearing, upon religious discussions. We are no longer faced by two irreconcilable doctrines—the omnipotence of God and the responsibility of man. We no longer find ourselves called upon to choose between them, while we are wholly unable to abandon either the one doctrine or the other. And we are no longer called upon to make the choice of surrendering either our faith in the universal reign of law, which is the foundation of all science, or else our belief in the personal responsibility of man, which is the foundation of all morality.

If it is true that, from the standpoint of the universe, man is the product of an immense complex of interacting forces, which have brought him into being and which decide his physical nature, his mental character and his actions; but that man himself does not live or think on that plane, is ignorant of the forces which have created him, and ignorant of most of the forces which now affect him, and cannot assess their relative strength or foresee their combined result; if, in consequence, he has to accept his own personality as a fact, as a thing in itself, as a fresh start, to regard it less as the effect of a series of prior causes than as a cause of a series of further effects—if all this is true, then these apparent contradictions are no longer incompatible, these ancient antitheses may be reconciled. The Divine Knowledge sees that all is determined: by virtue of his ignorance man must act, on his own plane, on the basis of free will.

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FORM AND CONTENT IN ART[1]

R. G. COLLINGWOOD, M.A.

EVEN the best of artists are human, and therefore capable of turning out bad work. The father of poets has set his children the example of nodding, and small blame to his children if in this, as in other matters, they have followed where Homer led. Critics, that hardy and self-sacrificing race of beings who voluntarily incur the enmity of artists for the sake of the common welfare, have to classify the various manners and causes of nodding in poets. I do not claim to be a critic, but I want to call your attention to a particular kind of nodding which presents a curious problem in the theory of art. I will call it the nod of the uncongenial subject.

Captain Marryat may provide an example. I do not think him a novelist of the highest rank, but I do think him, at his best, a definitely good one. A great deal of his work is shamelessly derived from the best eighteenth-century models, Fielding, Smollett, Sterne, and so forth; but there are occasions on which he seems to forget all this, and to rise on his own wings into the authentic air of fiction. The incident of the boatswain's trousers in *Midshipman Easy*, the description of the life of a Greenwich mudlark in *Poor Jack*, the portrait of Mr. Chucks in *Peter Simple*—these may not be great work, but they are good work, the work of a man who sees his subject clearly and can find words to describe it tellingly and tersely. But when you turn to *Masterman Ready* or the *Children of the New Forest*, all this has disappeared. The clear vision has gone, the pointed description has gone, the firm economical writing has gone, and you are left with a mere welter of sloppy stuff expressed in fumbling language.

There is nothing strange about this. Marryat was a sailor; he knew the sea and loved the service, and had thought a certain amount about it; at any rate, he had watched sailors for years together, and understood them thoroughly. When he sat down to write about them, his head was full of ideas, and the ideas brought the words. If Marryat had had no literary gift at all, his experience of sailors would not have produced that effect, and he would have written badly even about the things he knew well. If, on the con-

[1] This paper forms the text of a lecture given to the British Institute of Philosophical Studies in February 1929. In printing it in the Institute's own *Journal*, I have allowed the style and construction of the original lecture to stand unaltered, adding a few comments in the form of footnotes.

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trary, he had been a real literary genius, he might have been able to endow the virtuous Mr. Seagrave with the same life that he bestowed on Mr. Thomas Saunders. As it was, he was a half-and-half writer, neither a perfect fool nor a perfect genius, and very naturally his work was half-and-half too. It is all very simple. But what I want to point out is the relation between choice of subject and quality of work. Marryat somehow becomes a good writer when he writes about the sea, and a bad one when he writes about anything else.

This is a very common type of case, and it affects writers of bigger calibre than Marryat. Thomas Hardy, for instance, who seems incapable of doing poor work when he is describing the life of agricultural labourers in his own country, becomes a pretentious and almost incompetent magazine story-writer when he tries to deal with fine ladies. And it is not confined to literature. Turner, who could draw a line-of-battleship out of his head with every rope in its right place, became an ordinary bungler when he tried to draw a human figure. So, if Marryat nods over an uncongenial subject, he nods in distinguished company.

But, after all, why not? Must not the artist be stimulated or inspired by his subject? Is it not right and proper, and in the very nature of art, that the artist should enjoy the full use of his powers only when they are excited to activity by an exciting theme?

That suggestion certainly appears to have something in it when we consider cases like those which I have just mentioned. In these cases it is evident that the painter or writer in question was interested in some things and not in others, and that he painted or wrote well when it was these interesting things that he was describing. Yet there are cases which seem to point to a very different conclusion.

Take Jane Austen. The world of village gossip which she depicts was a world which, no doubt, she knew as thoroughly as Marryat knew the Navy. But you cannot find in her work any counterpart to *Masterman Ready* and the *Children of the New Forest.* When she leaves her villages and goes to Bath or Bloomsbury she does not leave her style behind. She seems, in a sense, indifferent to her subject. She writes about village life because that is ready to hand; something she must have to cut her teeth on, so she cuts them on the Bennet family; but one feels that any other subject would have done as well, or at least that she knew her job too thoroughly to attempt anything that she could not do.

The contrast between Marryat and Jane Austen, I think, may be put by saying that Captain Marryat was a sailor who wrote books, and Miss Austen a writer who lived in a village. I do not mean that Marryat was a worse writer than Jane Austen. As a matter

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of fact, he was; but that is not the point. I should say equally of Thomas Hardy—the earlier Thomas Hardy of the Wessex novels—that he was a West-country peasant who wrote books—peasant first and writer afterwards, the second conditioned by the first. Of a Marryat or a Hardy it would be, broadly speaking, true to say that they had to be stimulated to literary activity by the presence of a stimulating subject. Of Jane Austen it would be, broadly speaking, false. She did not fall in love with her themes; they did not excite her; she used them, a trifle cold-bloodedly, as material for the construction of a book.

There seem, in fact, to be two types of artist, characterized by fundamentally different attitudes toward their subject. One type waits on the subject. The subject must come to him and excite him, inspire him, raise his artistic faculties above the pitch of mediocrity, which is all he can achieve when the subject is less exciting to him. The other type takes the initiative. He does not wait for the subject to arouse his faculties; he is a skilled man, the master of a craft, and he chooses a subject for the exhibition of his skill with no more emotion than that with which the surgeon contemplates the case on which he is about to operate.

These two types of artist are generally known as the romantic and the classical. Romantic art lays stress on the interesting or exciting character of its subject; classical art does not. The romantic artist does not expect himself to produce good work except when his emotions are being aroused, or have been aroused, by some experience which is to become the subject-matter of his work; the classical artist does not recognize any such limitation. The romantic artist thinks of artistic success as dependent upon inspiration; the classical artist thinks of it as dependent upon skill.

It ought to be explained that this is not the only sense of the word classical. It is also used in other senses, not always in opposition to romantic. Sometimes "the classics" mean any works universally recognized as great, and in this sense the term classical is applied to thoroughly romantic artists like Beethoven. Sometimes, again, classical art merely means art which imitates admittedly great models, as when one speaks of the classical style in eighteenth-century English architecture. But for the present I am going to ignore these senses of the word, and use it simply as the opposite of romantic. The classical spirit is the spirit of perfect design, craftsmanship, master of material and construction; it is the formal spirit, the spirit whose aim is to achieve perfect form, perfect lucidity and expressiveness. The romantic spirit is, by comparison, a thing of incoherence and disorder; it prides itself on having something to say, not on how it says it; it despises formal perfection as a mark of chilliness and lack of inspiration, and it cares little for its

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touches being in the right place so long as its heart is in the right place.

Classical art, in a word, stands for form; romantic art for content. The romantic artist expects people to ask, What has he got to say? The classical artist expects them to ask, How does he say it? The romantic ideal of art is that the things it says should be notable things, exciting things, things in themselves deserving of utterance; and for the sake of their intrinsic importance it is tolerant of imperfections in the way in which they are expressed. Hence, in the absence of a notable or exciting subject, it lapses into triviality. A romantic poet like Wordsworth is sublime when he writes of sublime things, but when these fail him he becomes merely silly. A romantic painter like Turner, when he fails to impress you with the majesty of his subjects, irritates you by the repetition of a very few technical tricks. The classical ideal, on the other hand, is that whatever the artist says should be said as well as possible. Do not trust to the subject to carry you away and force you to express it clearly; do not waste power in letting the subject overcome the dead weight of our own incompetence; learn your job, and be interested in that, not in your subject. Thus classical art will deal with quite uninteresting subjects, or deal with interesting subjects in a quite uninterested way, and will exasperate the romantic critic by wasting time over dull subjects and not even trying to pretend that they are anything but dull.

Romantics are obviously warm-blooded and excitable people, and they often accuse classical art of being cold and passionless. That is a mistake, but a natural mistake. The classical artist is cold-blooded about his subject, but he is not cold-blooded about his work. The romantic portrait-painter falls in love with his sitter, and hopes that this will make the portrait a good one; the classical portrait-painter does not fall in love with his sitter because he is already in love with his art.

A very able critic, Mr. R. H. Wilenski, has written a book about *The Modern Movement in Art*, in which he has discussed the nature of romantic painting in a way that I can only call brilliant. He has illustrated the romantic character of a great deal of recent painting in an extraordinarily forcible and enlightening way. He shows, for instance, that the romantic artist concentrates his attention on the most exciting features of his subject, and comparatively speaking neglects everything else; thus a romantic portrait-painter like Sargent will emphasize the eyes and mouth of a woman, and paint them with great vigour and skill, but will content himself with a baldly conventional placing of his figure on his canvas and a frankly slovenly treatment of the accessories. The motive force of his picture is the excitement which he feels about the woman as a

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woman, precisely as Wordsworth writes a poem to express the excitement he feels about a mountain as a mountain. That is romantic art: art whose appeal is derived from the appeal of its subject—emotion recollected in tranquillity.

To the romantic art of the recent past, Mr. Wilenski opposes the architectural art of the modern movement. All really modern painting, he says, is directed to building up a structure of shapes. It is concerned with volumes or masses, and it regards a picture as first and foremost an arrangement of these volumes. This is not only true of cubism, with its artificially geometrical way of emphasizing certain aspects of solidity; it is quite equally true of all genuinely modern movements in painting. And, because it is concerned with the volumes of things, and not with the emotions these things arouse in us, Mr. Wilenski says that the modern movement in art is classical.

This is one of the very few things in his book with which I have the boldness to disagree. And I mention it here because I can find no better way of explaining what I mean by classical art. Classical art, most people would agree, is formal art; and what should this be but the art that attends to the forms, that is the shapes, of things?

To argue like that is to fall a victim to an ambiguity in the word form. It is quite legitimate to use form in the sense of physical shape, and to say that a painter attends to the forms of his subject when he attends to its shapes. But when we speak of formalities and formalism, and of the opposition between form and content, we are not using the word in this sense at all.

This will become clear if for a moment we stop talking about painting [1] and take illustrations from a different art. No one, I think, would allow the question whether Dickens was a classical or a romantic novelist to be decided by appeal to the question whether he had attended to the shape of Mr. Pickwick. And I cannot even suggest how the most misguided critic might apply this criterion to Beethoven, for musical compositions have no physical shape at all, and words like "outline" are used of them only metaphorically.

Yet the distinction between romantic and classical art certainly applies to music. Beethoven is certainly a romantic composer, Mozart certainly a classical one. What do we mean when we call Beethoven romantic? We refer primarily, no doubt, to some unmistakable flavour or colouring in his music; but we must try to analyse this flavour and see what has produced it.

[1] Mr. Wilenski expressly disclaims any intention of putting forward a general theory of art applicable beyond the special field of painting. But the terms classical art and romantic art are used outside this special field, as well as inside it; and no explanation of their meaning can be ultimately satisfactory unless it is applicable to the whole extent of their usage.

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The difficulty of this analysis is to reconcile the peculiar case of music with the suggestion I have already made about the function of the subject in a work of art. I said that romantic art was an art which depended for its value on the memorable or exciting or important nature of its subject. This works well enough in the case of painting, because a painting generally has a subject; and it works in the case of literature for the same reason; but music seems to have no subject at all. I do not, of course, refer to what musicians call a subject. A musical "subject" is part of the musical composition itself. The subject of a work of art, in the sense in which I am using the word, is something distinct from the work, something which the artist is generally said to describe or represent in the work; and in the case of romantic art, it is because the artist has been impressed by this other thing that he proceeds to express himself in the work of art.

Now it is clear that there are certain things about Beethoven which bring him into relation with this definition of romantic art. His music has an air of making weighty assertions, conveying a message, presenting philosophical or prophetic utterances. You remember the character of one of William de Morgan's novels, who at a period of dejection and misery heard someone play the rondo-subject of the Waldstein sonata, and said to himself, "Well, if *that* is so, there can be nothing to worry about." And this is just the comment that would have pleased Beethoven, who did definitely claim not only to be a bit of a philosopher or prophet himself—I do not know whether he distinguished very accurately between the two characters—but to express his thoughts in his music. And these claims are taken seriously not only by people like Joseph Vance in the novel, but by our latest commentator on Beethoven, Mr. W. J. Turner. I am not too clear about these matters myself. I do not find it easy to say exactly what the message is, which Beethoven so forcibly and impressively lays before us; and I should be sorry if my opinion of Beethoven's music were dependent on my opinion of his competence as a philosopher or his trustworthiness as a prophet. But in spite of that, I recognize that Beethoven himself had no doubts about it, and this fact contributes a definitely romantic element in his music.

There is another romantic element about Beethoven in the fact —again vouched for by himself—that he never composed without, as he put it, having a picture before him. The Pastoral Symphony he describes as "expression of feelings rather than painting"; but they are feelings derived from the contemplation of nature, and therefore we can identify the subject of that symphony and say that the relation between it and its subject is a romantic relation. And this brings us to the question of programme-music, which is

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all explicitly romantic in character, whether its subject is *Les Barricades mystérieuses* or *Harold in Italy* or *Le Bœuf sur le Toit*. And talking of Couperin and Berlioz and Monsieur Darius Milhaud, it always seems to me curious that the French, who most loudly defend the classical ideal, should be the most impenitent perpetrators of programme-music.

Musical critics, in attacking and defending programme-music, have often been distracted by a quite unimportant side-issue: the value or justification of a detailed "programme" in the sense of a document in words telling the audience what the music is about—in schoolboy language, a crib. They have not always realized that to call a piece of music by a title at all, as opposed to a mere descriptive reference-number like "String Quartet in C♯ minor, opus 120," is in principle to make it programme-music, to attach it to a subject and so deprive it of the proud epithet absolute. Nor have they always faced the question how many musical compositions which now have no title might have had a title if the composer had chosen to reveal it in one way or another—in the way, for instance, in which Beethoven said of the opening of the Fifth Symphony, "that is how Fate knocks at the door."[1] When these questions are faced, it can no longer be fancied that programme-music is an innovation of the nineteenth century, a freak of Berlioz and Richard Strauss and a handful of other eccentrics, to be attacked or defended as such; it must be recognized that programme-music is simply romantic music, one of the two great divisions into which music, like all the arts, has always fallen. Beethoven's programmes, we have seen, consist partly of philosophical ideas, partly of imagery drawn from natural scenes. This combination is quite typical of his generation, and brings him into close connexion with men like Wordsworth, Coleridge, and even (if we may accept Ruskin's interpretation) Turner—in fact, with all the romantic nature-worship and nature-philosophy so characteristic of the late eighteenth and early nineteenth centuries.

We can now return to the case of modern painting. It is claimed

[1] It is relevant to point out that even unauthorized titles like "The Moonlight Sonata" attached by the public to works of Beethoven have their significance. They show that the romantic flavour of the music is widely recognized, and its significance in the main correctly apprehended by its hearers. People do not, as a rule, feel called upon to attach romantic titles of this kind to works of Mozart, but to works of Beethoven they do; and this fact is not accounted for by postulating in the hearers a strong "visualizing" faculty or the like. A person who knows his way about in music begins "visualizing" when the music asks him to begin; or rather, he begins, not *visualizing* (for that implies a concentration on one kind of sensuous material), but building up in his mind *some* kind of non-musical "subject" for the music to which he is listening.

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that this is a classical movement because it is concerned not with feelings but with volumes and masses. But to select a subject for a picture because it has volume and mass, or because it shows an interesting arrangement of volumes and masses, is to select a subject for its own intrinsic qualities, and to trust to these qualities for the success of the picture. It is to throw the responsibility for the picture upon the subject instead of the painter. And that is the very definition of romanticism.

It makes no difference whether the exciting thing about a woman is her femininity or her volumes. If her femininity inspires an Academy portrait, and that is rightly called romantic art, the picture of her volumes, exhibited at the Salon des Indépendants, has exactly the same reason for being called romantic. Similarly, if the cloying harmonies of Victorian musicians were romantic because they were intended to suggest a maiden's prayer, the breathless dissonances of our modern composers are every bit as romantic because they are intended to suggest an express locomotive. The composers might wince to be reminded of the fact, but it is Romance that brings the 9.15 into their works. Classical art, I must repeat, does not mind what its subject is. It does not say to itself "We must avoid this, because it is in Dickens; we must avoid that, because it is the sort of thing Academicians paint; and we must choose the other because it gives us a feeling of modernity or proletarianism or emancipation from conventional standards." To choose subjects in that spirit is to label oneself a hopeless and incorrigible romantic. To rebel against romanticism will never make anybody a classic; indeed, the deliberate anti-romantic is only a romantic with an inferiority complex.

Do not suppose that I am an enemy of modern art. I am nothing so foolish. As a matter of fact, I enjoy much of it heartily, and my private opinion is that it is an improvement on the art of the last generation. I would rather see women painted with their faces all corners than with the exaggerated softness and fluffiness that are still the conventional marks of a female portrait. But that is not because I think angularity classical and fluffiness romantic. It is because I am tired of fluffiness and welcome a little angularity for a change. I do not think Cézanne was a great man because he emphasized volumes; I think emphasizing volumes is a good thing because Cézanne did it; and when a sufficient number of imitative duffers have done it, I do not promise never to look back with a sigh of regret to the chocolate-box Academy portraits of my youth.

My argument hitherto seems to have led to the conclusion that practically all artists are romantics, and that there are no classical ones except Mozart and Jane Austen. I will not spend time in asking whether any others could be found, or whether these too could be tarred with the brush of romanticism if we tried hard

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enough. But I want to raise two questions, which cannot be discussed satisfactorily except in conjunction. First, is romantic art worse than classical art? Secondly, was our initial separation of them not too drastic?

Mr. Wilenski's discussion certainly implies that classical art is the best kind and romantic art an inferior kind. There is something to be said for this. An artist who can only work well when inspired by a peculiar kind of subject is obviously not so skilled, not so much master of himself and his craft, as one who is free of that necessity. Yet it may not be thought certain that skill and mastery of a craft are the essentials of a great artist. It may not unreasonably be said that the greatness of an artist ought to be judged by the work he has done, not by the question whether he could have done it as well in the absence of an inspiring subject. If that is so, the necessary superiority of the classical artist disappears.

But, it may be replied, romantic art always has a tendency to suffer for its neglect of technical perfection by becoming incoherent and disorderly and allowing speech to be replaced by bluster, music by mere noise. That is true; but when it is good art it succeeds in keeping this tendency at arm's length. It does not always succumb to it; if it did, then romantic art would be a synonym for bad art, or rather for no art at all. Good romantic art does succeed in expressing itself; it does achieve technical success, and is therefore not inferior to classical art.

But this is only because it is partly at least identical with classical art. Classical art is that which achieves technical perfection, that which, whatever it says, says it as well as it can be said. It follows that every artist who succeeds in producing a work of art at all is, to some extent, a classical artist. A merely romantic artist would be a person whose inspiration was only expressed—if this can be called being expressed—in rantings and mouthings and meaningless gestures. It is the classical element in his art that keeps him out of that morass and makes him able to create something that really expresses him.

Art may therefore be at once romantic and classical. In deriving inspiration from its subject, it may be romantic; in converting that inspiration into expressive form, it must be classical. In this sense all art is classical.

But in order that it should be entirely classical, more than that is needed. We said that the classical artist is rather cold-blooded about his subject, and does not fall in love with it. We cannot, surely, say that this is true of all art, after saying that the opposite is true of romantic art.

This is not so certain as it may appear. You may be passionately interested in a thing at one moment and not at another. For instance,

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you may begin doing a piece of work because you very much want to earn some money; and suddenly, in the middle of the work, you may find that you have forgotten about the money and are only interested, for the moment, in the work. Or again, a painter may begin painting a lady because he is in love with her; but in such cases painters have been known to get into trouble because, once absorbed in their work, they have been discovered looking at their model not with the eyes of a lover but with those of an artist. For the moment the lover has ceased to be a lover; his love for the woman has given way to absorption in the task of painting. He may have been a romantic artist when he began to paint, but the work of painting, of its own accord, turned him into a classical artist before he had done.

The romantic and classical attitudes are quite compatible, when they are looked at as phases in the rhythm of artistic creation. The artist begins by being interested in a subject for its own sake; he likes it, or fears it, or feels that he understands it, or wishes to understand it better; he is taken by its shape or its colour or its softness or hardness; he feels drawn to it or repelled from it by instinctive impulses. These interests he takes as the subject of a projected work of art. At this phase the only value of the work of art lies in the fact that it is to express his interest, and if this interest had no importance the work of art would have none. But now begins the actual labour of artistic creation. The germ of this process is the original interest; but more than the germ is needed if the process is ever to reach its conclusion. The original interest must not die, but it must be subordinated to the literary or musical work, the painting or carving, that is going to express it. In the first phase the artist is a romantic. But unless he stops being a romantic and becomes a classic, the original interest in the subject will absorb all his attention, and he will never get to work with his pen or his brush. Thus Beethoven may have thought, when that four-note phrase came into his mind, "Fate knocking at the door"; and he may have said to himself, "I will write a symphony about Fate, all full of remorselessness and terror." But while he was scoring the symphony for a full orchestra he did not actually experience terror, he did not uninterruptedly feel the remorselessness of Fate; he was engaged in laying out patterns of sound for a very complicated instrument, and this work, this designing of his score, simply could not be carried out in a condition of terror. Like all very hard work, it was accompanied by a whole *obbligato* of emotions—irritations, apprehensions, triumphs, despairs—but these were concerned not with Fate but with the symphony. In other words, Beethoven was writing music, and writing it in the only way in which it can be written—classically.

The same analysis applies to the simplest water-colour sketch by

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the most elementary amateur. You see a hill curved against a grey sky; it looks forlorn and sombre, and you paint it to express that feeling. But after you have been painting for half an hour the forlornness and sombreness are no longer in the foreground of your mind; they are taken for granted, and what you are actually thinking is whether your sky is dry enough yet to paint the tree over it. The problems occupying your mind are the technical problems of your craft, that is, you are for the time being a classical artist.

All art, then, is classical art. It is only this classical element that enables the work of art as such to come into existence. The work of art is the creature of the artist's formal or formative power, his technical proficiency; and if anyone objects to this on the score that artists are born and not made, the reply that, if that is true, it means not that technical proficiency is unnecessary to them, but that they cannot acquire it except on a basis of natural gifts.

But at the same time all art is romantic art. A classical art that was not romantic would be an art with perfect form and no content, perfect mastery of its materials and no subject-matter, a perfectly expressive language with nothing to express. This is not a kind of art or a psychological type of artist; it is a false abstraction. But it is a false abstraction into which people really fall. Molière was caricaturing such a theory of art when he said that everything beautiful and true was in the dictionary—it was only a question of transposing the words. People who talk about music without understanding it have fallen into the same fallacy, and added that all possible tunes have by now been invented; only, unlike Molière, they did not mean it for a joke. Statements like these are based on assuming that art consists merely of patterns, formal arrangements of a given material. So far as it is classical, art is certainly that. But it is also an attempt to express something, to give outward and visible form to the way in which we are impressed by the things we come across in the course of our experience.

The romantic ideal insists on the connexions that bind art to the rest of life. It is romantic in Beethoven to be not only a musician, but also a lover of nature and a bit of a philosopher. It was romantic in nineteenth-century painters to try to be photographers, as Mr. Wilenski shows they did; and I may add that it is romantic in twentieth-century artists to try to be geometricians and engineers. If you could sever these connexions, you would get a sterilized art whose technical skill would never have a chance of showing itself. Now in this sense Jane Austen's art is certainly romantic. We know that she delighted in the society which she depicted, and that she was keenly alive to the pleasures of village gossip. Where she differed from her neighbours was not in being superior to these pleasures, but in making them the subject of works of art. And in this sense

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Mozart's music also has its romantic element. It may not offer us profound thoughts about human character and destiny with such explicitness as Beethoven's; but no one who is acquainted with the G minor Symphony or the score of *Don Giovanni* can fail to see that his works contain a dramatic or tragic element comparable to that which gives Beethoven his romantic character. To take a single significant detail: a recent writer has blamed Mozart for the wayward, loosely-knit, thematically illogical structure of the aria *Voi che sapete*. This amounts to saying that here Mozart is not allowing his work to be determined by classical principles. The observation is correct. But the answer—and the writer whom I quote has already stated it—is that the structure of the aria is perfectly adapted to the character of Cherubino, who sings it. Mozart is characterizing Cherubino in the same way in which Jane Austen characterizes Miss Bates.

The classical ideal insists that these connexions between art and the rest of life shall not be so close as to prevent its being art. The work of art must be itself; it must stand on its own feet and explain itself in an articulate and intelligible way. After all, the artist's business is to speak, and his expression is not achieved unless it is clear, and in need of no explanation beyond itself.[1]

Good romantic art is art that is well begun. Good classical art is art that is well done. It is always easier to begin well than to end well, and therefore it is easier to satisfy the romantic ideal than the classical. It is a comparatively simple matter to be impressed by something and to feel that you have something important to say. It is harder to discover the best possible way of saying it, and

[1] Here lies the explanation of the practice of giving titles to works of art. Of titles given to musical compositions I have spoken above; but of titles generally, this may be said: that the title is a reference to something not explained by the work of art itself, not explicitly present in it. As such, it has two functions, one classical and one romantic; and in point of fact, though emphasis falls now on one function and now on the other, these functions actually coexist in every case. If a work of art were purely classical, it would be so completely self-explanatory that a title would be unnecessary except for purposes of reference; and "Œdipus at Colonus" may be used for these purposes as easily as "Book iii, ode 3." The classical title, then, merely *labels* a work; the romantic title ("Ulysses deriding Polyphemus" or "Stanzas written in dejection near Naples") *explains* it. Now, if the romantic element in art is overlooked, or regarded as a mere defect, romantic titles will be regarded as a confession of failure, an attempt to evade the consequences of the artist's inability to express himself. But if the romantic element is properly understood, the romantic title appears in its true light, as an indication of the *dynamic* character of the work which bears it. This work is not merely a formal and expressive whole: it has grown out of some germ, some impression received in the course of experience; and the romantic title, telling us what this starting-point was, puts us in a position to reconstruct the work of art for ourselves more easily than we could otherwise have done.

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thus make it really intelligible to yourself and other people. What makes this so hard is that you have to subordinate your content to your form; you have to stop being filled with a sense of the importance of your message, and begin attending to the arrangement and lay-out of your exposition. A strong emotion may be the first step towards a poem; but unless you can master the emotion and actually cease to feel it while you devise ways of expressing it, you will never get as far as writing the poem. This was what Wordsworth meant when he spoke of emotion recollected in tranquillity. The emotion is the romantic element, the tranquillity the classical. Yet Wordsworth, after all, was not classical enough; and the defect of his poetry is reflected in his definition of poetry, where he betrays the fact that he sees nothing in the classical, the genuinely creative, element, except the mere absence of emotion; and even this is not correct, because the labour of composition has its own emotions.

In practice, therefore, it is too often true that to call a work of art romantic is to call it bad. Romanticism by itself never made an artist; and the mere fact that it is the first step in the creation of a work of art means that the artist is in danger of resting there, of being content with the consciousness of a sincere interest in his subject and a genuine desire to produce a work of art. Here modern artists are in the same boat with all artists of every period. There is at present a certain group of subjects which, for one reason or another, have imposed themselves on the minds of most artists. That is as it should be; no one can altogether escape the spirit of his age. But the danger of modern art is the old danger of mistaking correctness in choice of subject for artistic merit. There is no merit whatever in painting a group of people with cylindrical arms and legs, or in writing a novel in which everybody suffers from devastating complexes. The merit lies in getting your cylindrical arms and legs to form a harmonious and expressive arrangement, or getting your complexes to fall into an orderly and coherent pattern. That is what the good artists of to-day are doing. They are not content with being romantically interested in cylinders and complexes, they are trying to subordinate these materials to the formal demands of the classical ideal. The bad artists, now as always, are merely romantic, and think that the intrinsic splendidness of cylinders and complexes will atone for any lack of technical training and artistic talent. And, as the public on the whole agrees with them, and as the critics on the whole follow suit, it is difficult to blame them.

The upshot is that two things are necessary to a work of art: conviction and technique. Conviction, a sense of having something to say, is the romantic requirement, without which a work of art becomes a school exercise or a pot-boiler. Technique, the mastery of the craft, is the classical requirement, without which a work of

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art becomes an incoherent jumble of random gestures. Where you find a defect of conviction on the one hand or of technique on the other, you have found a defect for which nothing can compensate. Excellence of matter is no excuse for clumsiness of form; elegance of form no excuse for poverty in matter. But in practice the problem which is popularly supposed to arise when conviction outruns technique or technique conviction—the problem of estimating the true æsthetic value of works in which one of these factors seriously outweighs the other—seldom really arises. A defect on the one side is, as a rule, accompanied by a parallel defect on the other. Thus occurs what I have called the nod of the uncongenial subject. It is when an artist has nothing to say that he forgets how to speak effectively. But conversely, until he has learnt to speak, he has nothing to say. He may have feelings working within him, but they are only obscure emotional perturbations, and do not take the shape of a "message," a conviction to be imparted to others or brought clearly before himself. Conviction and technique, the message and the language, content and form, are not two ingredients capable of existing separately and then being brought together into a work of art. They exist together, or not at all.

In saying that every work of art must have these two elements in it, that an artist must have something to say which he feels to be worth saying, and also that he must be able to say it well, I am not asserting anything new. But at least I have some confidence that it is true; and it is so often forgotten that perhaps you will pardon me for saying it again.

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SOME REFLECTIONS ON THE NEW COSMOGONY

PROFESSOR HERBERT WILDON CARR

NOTHING is more surprising to the ordinary reflective man than the concept of a finite universe, yet it is to such a concept that the latest development of mathematical science, so admirably expounded in Jeans's *Astronomy and Cosmogony*, requires us to adapt ourselves. A finite universe is one in which anything moving outwards in a straight line, and maintaining its direction, must after an interval return to its starting-point. This seems a self-contradiction. A straight line, we think, must go on for ever.

"What is man in nature? A nought in regard to the infinite, a whole in regard to the nought, a mean between nothing and everything. Infinitely far from understanding limits, the beginning and end of things invincibly hidden from him in an impenetrable secret, equally incapable of seeing the nought whence he has emerged and the infinity which engulfs him." It is two and a half centuries since Pascal wrote these words, when new astronomical discoveries were revolutionizing human thought; to-day the astronomer can tell us with perfect confidence that the physical universe has limits both in extension and in duration, and he can measure its outer boundaries within narrow margins of error. With equal confidence the physicist can point to the limits of the universe on its inner side. The new science of radio-activity can measure the atomic constituents of the world and the processes by which energy locked up in electronic systems is set free in radiation. A very few years ago the two sciences, astronomy and physics, had nothing in common, neither subject-matter nor method: to-day they work hand in hand.

Let us first consider the picture of the physical universe which the new cosmogony presents to us. Since Galileo we have been familiar with the solar system and have known accurately the orbits of the planets, measured their movements, and calculated their gravitational force. Outside the solar system all was conjecture, and the enormous spatial distances seemed to make the possibility of accurate knowledge chimerical. To-day we know that the sun is one of some hundreds of millions of stars in a star cloud. This star cloud is dense at the centre, dispersed at the margins. The stars in this star-cloud are streaming in definite and ascertainable directions, and the whole cloud is rotating round a centre. The sun is near the centre, but not at the centre nor in any privileged position. We know the position

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of this centre and can measure the distance of the sun from it. The earth and the other planets of the solar system with their satellites are masses which, at a time in the past we can calculate, were torn off the sun's surface by a tidal action, caused, we think, by the near approach of another star to its path. Such approaches of stars to one another, resulting in a disturbance which would cause disruption and the formation of planets revolving in orbits, are very rare. Its probability can be calculated for any star, and we find that it is improbable that more than five thousand of the hundreds of millions of stars in the stellar system can have undergone this deformation. The stars themselves are masses of matter, atomic in structure like the earth. They exist in a gaseous, liquid, or solid state according to their temperature. Every star is radiating energy at an ascertainable rate, and with the radiation is shrinking and losing mass. We can calculate the exact amount of mass in tons which the sun is losing by radiation every second. Also we can calculate the amount for other stars in the stellar system.

This stellar system or star cloud, of which the sun is a member, is one of many million similar systems. The distances of these from our star cloud and from one another is millions of times greater than the distances of the stars from one another in the star clouds. In some of these, named from their shape the spiral nebulæ, it seems that the matter may be evenly distributed and not yet condensed into stars. The radiation which they emit proves to be of so penetrating a form that some astronomers think it must be due to the actual annihilation of matter, that is, to the final fall of the innermost electron of the atom into its proton and the complete dissolution of the atom into radiation. These nebulæ, or, as they are sometimes described, "island universes," though separated by immense distances, are evenly distributed. Their number is finite, not infinite. They are, as it were, a cloud of clouds. Beyond them there is nothing. This does not mean that our imagination is restricted, we may conceive, if we like, universes within universes like a Chinese puzzle, and *ad infinitum*, but what we name the universe (the aggregate of all radio-active systems, of everything which can in the physical meaning come to us or pass from us) is finite and closed, not indefinite and open.

Moreover, the stars, the stellar systems, and the universe which is the aggregate of them, have definite shapes. The sun and the planets are spherical masses with only slight flattening at the poles. The planets are equatorially disposed round the sun, with a slight eccentricity in their orbits which it is possible to attribute to the path of the disturbing star which caused their disruption, so that the solar system is disc-shaped. The masses are spherical, but the system is a plane disc. The stellar systems are oblate and lentiscular,

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and the universe itself has this shape; it has a long equatorial radius and a short polar radius.

The invention of the telescope in the seventeenth century enabled astronomers to determine with accuracy the distances of the sun and the planets. They had no means of extending their measurements to the fixed stars, and these they could only classify by their brightness. The Galilean co-ordinate system took the fixed stars as a frame of reference for the purpose of measuring the moving bodies in the firmament, including the movement of the earth itself. The modern astronomer, by means of the spectroscope, by telescopic photography, and by various devices, can now measure, effectively and accurately, the distance of the remotest stars and the directions and velocities of their movements. We are able to represent these distances, intervals, and velocities in terms of the ordinary norm of terrestrial measurements. Thus, if we take a yard to be a man's average stride, and 1,760 yards to be a mile, ninety-three million miles is the distance of the earth to the sun, or, as we say, the length of a radius of the earth's orbit. The length of Neptune's orbital radius, the outermost planet, is 2,800 million miles. These are the order of distances within the solar system. The distances of our sun from other stars and the distances of the stars from one another is expressed in millions of million miles. The nearest star to our sun is not, as was once believed, the bright star Sirius, but a faint star named by astronomers Proxima Centauri. Its distance is twenty-five million million miles. The distances between the stellar system and the other systems, between our stellar universe and the nebulæ or island universes, are reckoned in millions of million million miles. The length of the long diameter of the finite universe itself must be of the order of a million million of million millions of million miles.

Let us consider what these figures mean in terms of time, measured as we measure terrestrial time in seconds, minutes, years. Light travels through empty space at a velocity which carries it six million million miles in a year. All our information about the stars is dependent on this messenger, light. One light-year is therefore less than the distance between the sun and its nearest star, and for the distant nebulæ the messenger, light, must have been hundreds of millions of years on its journey before it delivers its message. When the image of a distant nebula is photographed in the hundred-inch telescope at the Mount Wilson Observatory, the image projected is of the nebula as it existed those hundreds of million years ago. If we suppose that the whole universe was created at the same time, and that its groups and masses have gone through the same changes, the nebula, as we see it, may represent what our stellar system was those hundreds of million years ago.

No less remarkable than this striking representation of the physical

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universe in its complete extension and duration, which the new cosmogony offers us, is the simple means by which the truth of the representation is assured. There is no play of imagination, no poetic fantasy, no bold speculation, nothing but simple reasoning and ordinary inference from observed facts. Very complex mathematical operations are involved, but the calculations are based on recognized principles of the interpretation of perceptual experience. Not one in a hundred readers of Jeans's *Astronomy and Cosmogony* may be capable of following the mathematical proofs, but not even one in a hundred can fail to grasp the principles and facts on which the mathematical operations are based. Suppose, to take a simple example, we accept the Bible chronology and believe that the stars were created in the year 4000 B.C., then since we know the velocity of light, if a new star appeared we could at once by a simple arithmetical calculation tell its exact distance and position in space. The new astronomy is more complex than this, but all its operations are reducible to principles quite as simple.

Such is the new cosmogony in its broad outlines. Let us accept is as true in the scientific meaning and reflect on what it implies for philosophy.

A first reflection to which it gives rise is in regard to the precise meaning of the term finite as applied to the universe. Hitherto the idea of a finite universe has seemed to carry within it a self-contradiction. The first antinomy of Kant reminds us that our conceptions of extension and duration, of space and time, carry with them the impossibility of confining them within any boundaries. The new cosmogony conceives the universe as bounded in extension and duration; as setting limits from within itself to the space and time it generates by its movement; and not as simply occupying a position and enduring through an interval of a boundless space and time to which it is indifferent. The finiteness of the universe does not, as we have said, set bounds to our imagination. It means that if we transcend the reality of the physical universe it can only be by supposing its plan repeated on some higher or lower plane. The old idea that if we travelled outwards we could meet no boundary to the space we could traverse or the time we could draw upon is no longer possible. The physical universe means the aggregate of all the matter there is existing, either in the form of mass or in the form of radiation, and we can say definitely and absolutely that this is a finite not an infinite quantity. The concept of a finite universe is therefore seen to imply a new concept of space and time. Instead of thinking of them as the precondition of mass and radiation, we have now to think of them as generated by mass and radiation. It is a curious thought and seems to reverse the natural order in our way of looking at the world. Yet we may present the idea in quite

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familiar form. When we observe the condensation of steam into water vapour we easily picture to ourselves the formation of the small water-drops as the diffused gas shrinks into globlets. If these formed masses rotate, in rotating they will create a field of force around them. We usually describe this field of force as the void left by the shrinking mass, but in fact the movements of the little spheres, their rotation, influences this void and imposes on it a. definite structure. If we imagine a free particle travelling independently through the cloud of water-drops, it would pass from the gravitational influence of one drop to that of another. We have now to think of the whole universe on this analogy, as consisting of shrinking masses in rotation, losing mass by radiation, and these material movements as determining the space and time of the universe. We must give up the idea of a space and time absolute and independent of the movements of masses.

A second reflection is still more disconcerting. The universe is not only finite, it has definite shape. We had always supposed that when we look out into the firmament the enveloping space extends indifferently in all directions. We speak of the celestial sphere and think of it as a vast indefinite expansion. We have long known that the stars are not evenly distributed, yet we have never supposed that so far as extension is concerned any direction is specially privileged. The mechanics of rotation prove to us that the universe cannot be spherical, and as matter of fact the distribution of its masses gives it a double convex oblate shape, thick in the middle, thinning out at the margins. The earth and its satellite the moon, the other planets and their satellites, and the sun itself, are spheres, only slightly flattened at the poles by their rotation; but the figure or shape of the whole solar system is not that of a sphere. It is a disc with a rotating sun at the centre and planets moving in equatorial orbits round it. The slight but important eccentricity of the orbits provides the argument for the tidal theory of the origin of the planets. If the planets had been thrown off by rotation simply, the orbits would have been uniformly equatorial; the slight eccentricity is only explicable as due to the path of the star, the approach of which caused the gravitational disturbance. The stellar system of which the sun is a member is not a sphere, but a long extended thin oblate spheroid. Its components are not all equatorially disposed to one another, but they are nearly so, and our view across the long plane to the thin edges gives its filmy appearance to the Milky Way. The rotation of a diffused mass produces flattening and leads to wide equatorial dispersion and thinning. Consequently we must think of our stellar universe as to all intents and purposes a plane in two dimensions rather than a sphere in three dimensions, at least we must imagine the third dimension to be quite disproportionately

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contracted or shortened in comparison with the other two. If then we explain this shape of the universe by rotation and take this rotation to be the fundamental physical process, it is clear that the polar axis is continually tending to shorten and the equatorial axis to extend. If this be so, there must be a very curious illusion in our consciousness, for when we are moving in the polar direction the universe must be contracting us, when in the equatorial it must be expanding us. We are no more able to be conscious of this than we are able to be conscious of the daily reversal of our position as we become antipodal. The life force which has determined our evolution must have contrived for us this psychical disposition. It may suggest to us even a bolder speculation. Perhaps our universe is in reality two-dimensional, and the masses which appear to us spherical may be, perhaps, merely an effect of crumpling or twisting. In any case. worlds are not strewn in all directions. Their movements have no analogy to that of fish in a bowl or bees in a swarm or to the oscillations of the Brownian particles in a cell. Jeans has illustrated the distribution of the great nebulæ by asking us to suppose fifty tons of biscuits evenly disposed in a sphere with a mile radius; their distances would be twenty-five yards apart; in such a universe our star system would appear as a flat cake thirteen inches in diameter and two and a half inches in thickness.

A third reflection is concerning the magnitude of the universe. Contemplated in relation to the earth its dimensions are overwhelming. Yet curiously enough the astonishing figures are not awe-inspiring; they give us no æsthetic emotion of sublimity. Vast distances and intervals, enormous velocities and temperatures, expressed mathematically with absolute precision and in a perfectly intelligible notation, do not evoke the never-ceasing admiration and humiliation of spirit of the Psalmist: "When I consider thy heavens, the work of thy fingers, the moon and the stars which thou hast ordained." Why does the new cosmogony fail so signally to increase our reverence? The answer surely is that mere magnitude is nothing in itself. There is a norm of magnitude fixed for every living being by the range and nature of its organic activity, the magnification of this is a simple intellectual device with a positive and negative sign, and the presentation of the magnified picture raised to any power is a mere exercise of the imagination. Yet there is something very striking and impressive in the mathematical operations which have given us the new cosmogony. It is that cosmogony now requires us to abandon the idea of an infinity beyond us and an infinity below us, and recognize that our universe is systematized both in its macroscopic and its microscopic aspects. On the macroscopic side is the stellar system, and on the microscopic side the atomic system. Either side of us, in the galaxy and in the atom, we meet with form, figure

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shape. Both are conceptual limits. On neither side do we ever come into perceptual contact with these conceived realities, but our universe is rounded off by the concept of atomic radiation on the lower limit and stellar radiation on the upper. Only by holding the two conceptions together do we reach our new concept of the universe as a finite radio-active system. The distant nebulæ are conceived as ultimately constituted of atomic systems identical with those on earth. Even when we conjecture that there may be atoms in the interior of stars heavier than any known to us, they must, we think, be constructed on the same model. We see therefore why astronomy and physics inspire no emotions. What we admire in them is not the objective content, but the marvellous success of the human intellect in rational construction. The scientific structure is abstract and cold, it does not move the human spirit and overawe it with a wealth of emotion such as it experiences before a sunset or a storm or in the contemplation of a wayside flower.

A fourth reflection is in regard to the relation of man himself to this new universe of his conception. Is man himself to regard himself as part of the system he has been able to conceive? Man is one form only, it may be the highest, of the myriad forms of life, which seem to have evolved in a continuous adaptation of form and structure and organic function, on the surface of our earth, an insignificant speck of dust in relation to the whole universe. By his rational power of interpreting his perception he is able to endow his own constructed concept with objective validity; must he include his own intellect in the system it has itself created? Life is a spiritual activity materially conditioned. In the only form in which we experience our activity we find it dependent on an organic structure and on well-defined interrelations with an inorganic environment. Life and organic activity are the subject-matter of biology; astronomy and cosmogony are solely concerned with its physical conditions. If the problem of life intrudes itself into these physical sciences, it is only in so far as life is thought to be bound up with these conditions. Before, therefore, we can form any judgment on such a problem as that of the relation of the human mind to the concept it has excogitated we must take account of two facts. The first is that the physical conditions of life as they exist on this planet are of the rarest occurrence in the universe, if indeed they are not absolutely unique. It is only on an insignificant speck of dust, as it were, in the great universe we contemplate, and for a moment of duration which is but a flash in comparison with the duration of the universe, that the whole human drama is being enacted. This is the first fact, and the second is equally important. It is that the evolution of life on the earth is of such a contingent nature that the probability of a repetition of its history, including the emergence

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of the human form elsewhere in the universe, where the physical conditions are favourable, is practically negligible. It would be of the same order of probability as if we were to imagine the reign of Queen Victoria having a counterpart and analogy in the planet Mars. Life is physically conditioned, but living activity is not in its nature physical. The physical conditions of life on this planet can be conceived to exist without life. Life is the presence of a spiritual, that is, purposive activity which, by intercepting solar radiation and magazining it in unstable carbon compounds, has evolved complex and elaborate self-repeating organic mechanisms.

How then does the new cosmogony affect the problem of life and that spiritual character of life which we call mind? What place does it assign to them in its scheme of the disposition of stellar masses by the operation of the forces bound up in the atom and liberated in radiation? It can tell us nothing. It is open to us to believe that we who have excogitated this great scheme are ourselves a product of the conceptions we have ourselves formed. However paradoxical it may seem when stated in this way, we cannot say that the belief is unnatural, for we are inserted in some way in the physical reality of the universe and act as part of it. If, however, we conceive that life and mind have been evolved from the same forces which have formed the stellar systems by atomic combinations and by their dispersion in radiation, we must admit that between these physical forces and living activity there is not merely a missing link to be found but a deep abyss to be bridged. It may be, however, that it is not mind which belongs to nature, but nature which belongs to mind. Such a view, while it is no disparagement of the new cosmogony, completely alters its perspective. Let us assume that in the most literal sense the scientific concept exactly represents the reality, even so we cannot pretend that the atoms with rings of electrons and the free radiation into which they can be dissolved, themselves live and think, or have anything which of itself supports the concepts of life and mind. We are limited to supposing that when certain physical conditions are realized life and mind are superposed. Radiation does not undergo metamorphosis into life and mind; death is not a release of energy; thought is not dispersed in radiation. The radio-active world is conceived as self-subsistent. On the other hand, nothing in the concept of living activity limits it to any particular physical conditions; it may find means for its exercise in forms wholly unknown to us.

A fifth and final reflection is on the relation of mind to nature. Is not the most wonderful thing about the new cosmogony the fact that our perception being limited and selective, self-owned and subjective, we should yet be able to form this objective concept of the universe? There is profound insight in the humorous story of

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the man who could find no matter for astonishment in the vast distances of the stars, but was extremely puzzled to account for the way in which we had come to know their names. There are myriad forms of life, and each of them has within it the possibility of a cosmogony, for any organic form of activity will, if it is conscious, perceive the universe from a viewpoint which will have nothing in common with the human. Jeans has a curious speculation that possibly we are the youngest cosmogonists in the universe. The really curious reflection is that our cosmogony is not imposed on us from without, but elaborated from within. More wonderful than the universe which science has extrapolated is the human mind which has extrapolated it!

This scientific work of extrapolation deserves attention. The new cosmogony has not been discovered in the way Galileo discovered the moons of Jupiter. Though based on observation, it is not a discovery, but an active work of mental construction, in which two entirely different orders of measurement, belonging to two entirely independent directions of research, are unified. That this is so is evident when we consider that the physical theory of atomic systems and radio-active force has nothing in it which depends on astronomical observations. Astronomy and physics each stands by itself without affecting the other; for example, the correctness of the astronomer's measurements of a star's parallax does not rest on the coherence of the electron theory. For science they are two independent domains, but for the cosmogonist they supply the two factors which in combining give unity to the picture of one universal process and stamp on the universe one pattern.

The final question we are then forced to ask is: Were there no mind would there be a universe? It is no answer to say with the idealist that there is no object without a subject and no subject without an object. It is true the terms subject and object are relative terms, and apart from their relation purely abstract. But we are now admitting that the universe is a concept of the mind, that is to say, the universe in question is not the world we perceive which may exist only for the perceiver, it is the universe we conceive as the real cause of perception. Is there any sense in which we could affirm the reality of the world we conceive apart from the mind which has conceived it? If, following what seems to be an instinct of our intellectual nature, we reply, Yes, it can only be in regard to an abstract reality. But the universe in its bare abstract reality would lack something essential to our concept of it. It would lack unity. It is only for the mind that order, pattern, imagery exist. Nature does not itself form an image of itself. The reality of the universe may not be mind-dependent, but in the absence of mind, reality would not be order and unity. At the most it would be the possibility

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of order. On the other hand, the mind by the essential nature of its activity imposes order on reality. Has not Kant taught us that the ultimate condition of knowledge itself is the transcendental unity of apperception? The impressiveness of the new cosmogony is not the reality but the unity of the physical world. Without mind this unity would not only be meaningless but reality could find no place for it within itself.

In these reflections I have kept in view that the new cosmogony is a physical, not a biological, still less a metaphysical, construction. Yet it raises philosophical questions of the first importance, and, I think, points the direction in which a complete metaphysical construction may be attempted.

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SCIENCE IN PRACTICE

PROFESSOR LEONARD J. RUSSELL

I

THE transition from a vague generalization to an accurate statement is the first step on the road to science. It is a step of great importance. Vague generalizations find a ready entrance into many minds, and produce a comfortable sense of satisfaction that is easily mistaken for knowledge, and that stops further questioning. An exact statement of fact, on the other hand, draws attention to detail, and shows itself to be set in a mass of further detail that it challenges you to explore. "Nature abhors a vacuum" sounds final; it explains why water will rise in an ordinary suction-pump rather than allow a vacuum to be produced; why the schoolboy's "sucker" will lift a stone; and many other phenomena of a similar kind. It explains everything by a phrase and stimulates no inquiry. But when Galileo noted that the pump would raise water only to a height of about 32 feet, and pointed out that this gives a measure of the extent to which Nature abhors a vacuum in its dealings with water, new questions arose, stimulating further investigation. And Torricelli, incited by Galileo's remark, compared the height to which water would rise with the height to which mercury would rise, and finding (as he had suspected) that these heights represented equal weights of water and mercury, was enabled to see the "force of suction" rather as the pressure brought about by the weight of the atmosphere. But this was a mere *aperçu* until a detailed set of experimental observations had been made, noting the various heights to which mercury would rise under different conditions, and until a complex theory of pressures in liquids and gases had been developed, hand in hand with the results of experiments not only with mercury, but with other liquids as well. The development took time, and involved the researches of a number of scientists; but the germ of the later discoveries was already contained in Galileo's remark. To measure carefully the extent to which a phenomenon occurs in various conditions is to be set on the path of discovery.

The scientist, then, has a desire for exactness of statement and a passion for detail. But mere collections of exact facts, however detailed, do not satisfy him. If Torricelli and his successors had been content to measure the heights to which various liquids—water, mercury, oil, etc.—can be drawn up in a suction-pump, we

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should be no further on. We should have a table of heights connected with a number of liquids. But our observations would remain disconnected. If we added to the table a list of the weights of these columns of different liquids, so finding that whatever the liquid, the weight that could be drawn up into a tube of a given cross-section was in all cases the same, this would be a significant discovery, rejoicing the heart much more than an additional fact. For it would link the facts into a whole, bringing them all under a single generalization. Yet even this generalization would not satisfy the mind. It would, of course, be a false generalization, inasmuch as it neglected variations of atmospheric pressure; but even if it had happened to be true, it would not throw any light on itself. Torricelli's mind introduced the pressure of the atmosphere from the very beginning: not merely as an additional fact, nor as enabling a wide generalization to be arrived at, but as a means of understanding how the raising of the liquid took place at all. The scientist's passion for exact detail is bound up in him with a passion for finding out "how things go."

But we must be careful. The "go" of things involves some kind of linkage between facts. What kinds of linkage are required if the mind is to be satisfied that it understands how things go? That is a question that we may attempt to answer beforehand, but that cannot be completely answered beforehand. Consider the changes in the habits of an animal when its environment changes in character: what kind of explanation of this will satisfy the mind? You cannot say until you have discovered the satisfactory explanation. So long as the linkage of facts is incomplete and unsatisfactory, it will sooner or later show itself to be so; and we may suppose that completeness too will manifest itself when it is arrived at. But it is a great help to investigation to endeavour from time to time to formulate one's view of what kind of linkage one would regard as satisfying the mind, so long as one is not dominated by one's formulation.

One kind of linkage that the mind of man has for the most part steadily sought after is that of continuity in space and time. If a messenger is observed at a particular place at one time and at a distant place some time later, observation endeavours to trace his positions at all the intervening times; and if at two moments close together he is found at two places far apart, his movements in the interval being unable to be traced, this state of affairs constitutes a challenge to observation and to thought. It is not finally satisfactory.

In the case of alterations of state a more complex situation is present. A body changes colour. In this case the mind is not satisfied simply to describe the complete set of changes at various moments

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of time. If all colour changes were like the change that takes place when a painter gradually transfers colours from his palette to a canvas, such a description would be more satisfactory. For the mind can grasp such a situation more readily. There is a simple transference. What is gained on the canvas is lost to the palette. But in many colour changes there is no palette obvious. A leaf fades from green to yellow, and then becomes brown. The green simply seems to vanish, the yellow simply to spring into existence in its place. Such "facts" are felt to be less complete and satisfactory than the "facts" of the colour changes in the case of the picture.

In colour changes of this unsatisfactory sort, what we may call the "literal" links of space and time, which are relatively sufficient in the case of the messenger, are not sufficient, and other linkage is required. A hidden palette is sought for; if it can be brought to light, the situation becomes clearer.

Here we have the first big significant qualification that has to be made to the statement that the scientist seeks facts, or even that the scientist seeks linked facts. Facts whose complete space-time linkages are made out in their own kind may remain entirely mysterious. Mere statements of the changes of colour, smell, taste, sound, of an object, as it moves from one place to another, or as the time passes, will give one kind of complete space-time linkage, but with no enlightenment; and no scientist would be satisfied with them. The kind of detailed statement that is sought after is that which gives enlightenment as to how the changes described are brought about.

A ship is being loaded. We see the cases being wheeled along the quay, caught up by the crane, and lowered into the hold. The ship sinks deeper into the water. In imagination we see the water pressing against the sides of the ship, the ship pressing the water away.

An account of such changes as these holds the minimum of mystery. And in his account of changes in general, the scientist is seeking to arrive at accounts which, though not necessarily of the same kind, have as little mystery as the account of the loading of a ship.

II

The task is not simple. In the simplest happenings there is much that is mysterious. Indeed, the mystery is apt to deepen as we approach simplicity. Consider the old attractive picture of happenings as based on the movements of hard atoms in space, their collisions, groupings, and re-groupings. There is something very

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strange in the idea of two solid bodies approaching each other through empty space; very strange, too, in what happens when they collide. How does a solid body manage to preserve its solidity in such an encounter? What makes the parts cling together? Why does the body it meets not either cling to it, so that the two form a single body, or break into fragments by the impact? What is the inwardness of the situation in which the bodies change their distances from each other? What really enables a body to move through emptiness?

It is clear that such questions meet with no answer, and that if we are content with such a basic happening as this, we are accepting it as basic merely because of our inability to probe farther. Yet our minds are ever busy, seeking to make a deeper analysis, and casting round in all directions for a clue. But the development of knowledge is not in a simple direction. Instead of providing us with the clue we are searching for, enabling us to penetrate farther into the situation we have previously accepted as basic, observation often results in compelling us to modify our views. Instead of showing us how a body can remain solid during impact, modern observation compels us to see that the notion of a solid body is not satisfactory, and deepens the mystery we hoped to clear up. The relatively simple conception of a body moving through empty space, which depended for its simplicity on the sharp distinction between space and bodies, has been replaced by a complex conception which rests on the denial of such a sharp distinction.

The point I want to make is, that we never arrive at a perfectly pellucid situation, one through which we can see to the very end; and that the situations which we accept provisionally as relatively simple often turn out to be either very complex or even impossible.

III

It may be suggested that if the investigator were in a position to pursue his analysis in a particular case right through to the end, so that he could follow every step without the slightest gaps, and see the contribution of every factor without fail, he would have no need to check his analysis by reference to any other case, and have no need to appeal to any general principle of law or of uniformity in the nature of things. But as a fact, as I have indicated, there is no situation seen as clearly as this would involve. The most basic situations at which we arrive—the slight drawing towards one another of two masses, freely suspended, under their mutual attraction; the production of a magnetic field by the passage of an electric current; the loss of particles and of rays by radio-

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active substances; the combination of a number of substances to form new compounds; the changes taking place in a cell in the process of cell division; and so on indefinitely—are complicated parcels of events whose contents we are unable completely to open out; we have to handle them with care; when we see them only in a single case we have to admit that we see only darkly what happens. And our only method of certifying that they do really enter into the single case in the way we suspect is to analyse other cases of a similar and dissimilar kind; and the wider the range of cases to which we find we are led to give a similar account, the more is our satisfaction with this account.

But the use of such a method of comparison to check our accounts of what happens makes a very wide assumption about events. It assumes that if we find a particular parcel prominent in a number of diverse cases of a particular phenomenon, we can take it as not merely prominent, but as significant; as having something fundamental to do with the phenomenon in question.

Now why on earth should we make such an assumption, use any such help in our analysis? It is clear that if we find in one case the parcels A and *b* prominent in the series of events leading to *c*, while in another case we find *a* and *b* leading to *c*, our mind is challenged to look more closely at the A and the *a*, to see whether our analysis can be pursued farther; since we do tend to suppose that it is more satisfactory to arrive at an analysis which results in our having the same *a* and *b* wherever we have an event *c*.

From this point of view, statements which are perfectly general—"wherever *c* is found, *a* and *b* are found, and *vice versa*"—are more satisfactory than statements which admit of exceptions—"sometimes where we have *c*, we have A and *b*, sometimes *a* and *b*"—because the former do not, while the latter do, indicate a possibility of our having got hold of something irrelevant in our accounts.

But though they may be more satisfactory, they do not of themselves throw any more real light on the situation in the particular case. If I do not see into what happens in a particular case, how does it help me to know that what happens in this case always happens in such cases?

It looks then as if we can conclude that in our investigations we never come to situations that are perfectly clear right to the end, and that in so far as we have to rest in situations lacking this perfect clarity, generalization, showing uniformity of the type of situation throughout the whole range of its occurrence in nature, does not add to our insight, however much it may add to our feeling that we are not mistaken.

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IV

Let us look at this conclusion a little more closely. It suggests that if we could look right into particular instances, generalization and uniformity would be of only secondary concern; and that where we cannot do this, generalization gives us no additional light, though it does give additional satisfaction.

But it may be asked whether the ideal of seeing clearly into a particular case is a possible ideal. Is generalization only a *pis aller*, into which the investigator is forced because the other road is not open to him?

We find, indeed, that the investigator sets store by a generalization in proportion to its width. To discover that a principle applies without exception over a wide range of fact does bring satisfaction to the mind, even though no clear insight can be gained as to the machinery of production. And to show that various principles are linked with one another even without having insight into the actual mode of linkage is felt to be a step in the direction of progress. Thus the principle of conservation of energy, once accepted, gave satisfaction just because of the way in which it introduced a general linkage into a vast number of previously isolated events, even though it involved many situations of fact which were obscure—changes of motion, changes from motion to heat, to light, to electricity, and so on. The extension of the principle to plants and animals, making it cover the whole field of events, was a further triumph, even though no tracing of the actual sequence of energy changes was possible. And when in the march of physics the principle of conservation, the principle of gravitation, and other principles, are linked up with the abstruse framework of space-time into a wide mathematical system, and shown in their limitations, it is the imposing width and power of the generalization, even more than the amount of insight gained into particular cases, that arouses admiration.

But the antithesis, between generalization on the one side and insight into particular cases on the other, is not hard and fast. To arrive at a generalization does bring us nearer to the understanding of particular cases. It may indeed seem to carry us in the opposite direction. It may tend to deprive the particular case of its apparent relative separateness from the whole scheme of things, and consequently of its apparent autonomy. This happened with the study of the large scale movements of bodies, in consequence of the formulation of the Newtonian laws of motion and of the law of gravitation. Generalization of this width, which gave a means of studying motions of bodies under a very wide range of conditions—projectiles on the earth, the heavenly bodies, the tides,

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etc.—while it helped the understanding of particular cases, produced the sense that there was something at work of so all-embracing a character that particular bodies were merely so much flotsam on its surface. A similar impression is left by the success of physical chemistry in linking the various atoms and their properties in a single numerical scheme, though here the individual reasserts itself at the very moment when the generalization has enabled us to penetrate most deeply into it. But such generalizations as those connected with the theory of evolution suggest a different kind of situation. In studying the life-history of a particular species of animals, the zoologist is trying to make out a cycle which is at once representative (and so general) and individual. His generalization as to the interdependence between flora, fauna, and physical characteristics of a particular region supplies him with a point of view from which to study the life of a particular animal more closely. The evolutionary attitude gives him provisional justification for using comparative studies, both of animals now living, and of fossil forms, with the object of making out the significance and function of the various parts of the animal's body, and of understanding the changes that take place in it through its various stages. It is here the individual that holds pride of place. While "gravitation" may suggest a universal sea that forces bodies into insignificance, "recapitulation" can only refer to something situated within the individual embryo. And though the view, that the individual in its early stages of development recapitulates (with gaps and blurs and excrescences) the history of the species, does not bring us any nearer to a clear perception of how this happens, yet it does provide help in indicating what to look for, both in studies of the embryo and in comparative studies. Generalization in this field is thus a means of bringing us closer to the individual. But at the same time it is not merely a means. It is valued for itself. The closer studies of the individual made possible by generalizations enable further generalizations to be made; and it is clear, when we watch the biologist at work, that he is always endeavouring to progress in both directions at once. Mendel makes interesting discoveries by crossing various kinds of pea; his work becomes the starting-point of a whole series of investigations in the hands of his successors, who apply his methods and seek to test his results on mice, fowl, wheat, insects, etc. We have both new detailed knowledge about individuals (how else could the generalizations arise?) and new generalizations. And the generalizations so reached are made the basis of wide speculations covering the whole field of life, and of the interrelations between species.

This is typical. Generalizations are not mere means for the study of individuals. They are prized for their own sakes. They are some-

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times even described as the end of science. But the study of individuals is not a mere means to the formulation of generalizations. It too is prized for its own sake. It too could be described as the end of science. And it is well, in such a preliminary survey as we are attempting here, to keep before us the double endeavour of the investigator—to explore ever more and more deeply into the recesses of the particular happening, and to push outwards so as to see what is happening in this case as typical of what happens elsewhere.

It is all the more necessary to stress this at the present time, because of a widespread tendency on the part of those, whether scientists or philosophers, who are philosophizing about science, to stress the general aspect of science, rather to the detriment of the other aspect. Thus when it is said that science is abstract, and gives an account only of the measurable aspects of things, and does not bring us into touch with the inner nature of things, it is well to remember that the investigator in actual practice is always seeking in both directions, and always progressing in both directions. And though his progress in the direction of abstract generality may be the more spectacular, his progress in the other direction is none the less genuine.

V

Let us look at another aspect of this contrast.

The task of investigating an obscure phenomenon is one of great complexity, and calls for various aids. The greatest and most important aid any investigator to-day has is that of his predecessors and contemporaries. The situation is analogous to that in practical life. If I want to fix one piece of wood firmly to another, I am likely in modern days to use a hammer and nails, or a screw-driver and screws, or a glue-pot, brush, and glue. All these methods and instruments are ready to my hand. Their development was the result of co-operative effort of workers in the past. In the same way the modern investigator has at his disposal numerous instruments of observation and of measurement, and numerous methods of analysis, elaborated through slow stages in the past. An instrument or method of attack devised for one purpose is improved and modified to apply it for another purpose. A whole technique of investigation has to be learned by the investigator during his apprenticeship. Of the development of this technique no general account can be given; a separate account would be needed for each instrument, process, and field. But it can be said that new discoveries in any field not only provide new facts, but lead to the development of new instruments and new methods of investigation in that and

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cognate fields. One has only to think of such instruments as the thermometer, the microscope, the galvanometer, the calorimeter, the spectroscope; or of such methods as are involved in quantitative chemical analysis, or in the physiological study of muscular contraction, or in the preparation of microscopic slides or of cultures of micro-organisms, to see how much is ready to the investigator's hand, as the result of the work of his predecessors and contemporaries.

Every instrument embodies a mass of observed fact. But it does more than this. Its use, and the interpretation of the results gained by its use, involves to a lesser or greater extent the application of theoretical considerations; that is to say, involves the interpretation of facts in a particular way. The use of a galvanometer, for instance, to measure the strength of an electric current, depends on the fact that an electric current can be made to deflect a magnet. But this deflection could not be utilized as a measure of the strength of the electric current without the application of theoretical considerations relating to electricity and magnetism. Theory enters even more abstrusely into the use of observations made by means of the spectroscope. The dark lines in the spectrum of an incandescent gas do not carry their own message, but they can be made to reveal many things about the nature and motion of the gas, when interpreted theoretically.

This use of instruments is of great importance. Without instruments progress in discovery would be stopped. An instrument in use embodies a mass of facts rendered fruitful for further discoveries by theoretical interpretation. The problem of the investigator presents itself from one angle as that of discovering new ways of using old instruments or of discovering new and more adquate instruments. The progress of biological research is hastened by the refinements of microscopic observation which have made possible experimental work on the living organism under the microscope. The development of methods for the study of electrical and chemical processes within the cell has led to further progress. Nature lies hidden in a strong room secured by cunningly contrived locks and bolts. The scientist is engaged in a gigantic burglary; he is the supreme cracksman. And for many investigators this is the prominent aspect of their work. For them a new theory is important because of the way in which it leads to new instruments of attack. It is of only speculative interest except in so far as it does so. But if it does so, this fact gives it weight beyond its theoretic aspect.

VI

The conclusion roughly stated in the last section of course represents only one phase of the see-saw of considerations presented by

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the spectacle of the scientist at work. But it is so important as to deserve separate statement, apart from any qualifications with which we may be disposed to hedge it round. There are many scientists who would accept it without any such qualifications. Generalizations for them are mere summaries of facts, theories and hypotheses are mere instruments for the discovery of further facts. While generalizations and theories, however, do perform this function, I do not think it is their only function, or their complete significance. You cannot really break up a generalization into a mere sum of single observations, of such a sort that each has its significance for you quite independently of all the rest; and no scientist ever does this. Every concept of science—every property or fact—that science regards as fundamental or specially important owes its importance just to its representative character. "This chair has a smudge of paint on the right front leg" may be a fact, but no science would become enthusiastic about it. But "this gas cooled when it expanded rapidly" is a fact of a different sort, and physics takes kindly to it. It is in fact an embryonic generalization into whose details the mind finds it can penetrate, at least hypothetically, and that is why it is welcomed. And if it be suggested that what the investigator wants is facts that will lead to the discovery of new facts, the question must be asked how such "leading" is possible, unless the facts in question are sufficiently representative, and sufficiently transparent, to be able to give rise to general instructions.

The field of science is wide; in some departments generalizations bulk more largely than detailed facts, abstract theoretical constructions seem the ultimate outcome; in others it is rather the detailed facts which give meaning and value to generalizations. But I cannot help concluding that too much stress on either facts or generalizations results in a one-sided picture of what is going on in any department.

VII

In this preliminary discussion I have tried to keep to considerations that arise in connection with the activities of the scientist in his work of investigation, avoiding as far as possible the general theoretical issues that arise in connection with the philosophy of science, although general issues would keep breaking in. The question so far has been mainly, what kind of thing the investigator is himself out for, and this I have tried to deal with in my own way. The question involved in the theory of science is rather different, viz., what kind of thing the methods of investigation used in science can succeed in giving. It is clear that the two questions are rather different in nature, although the answers to them are not inde-

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pendent of one another. The investigator himself is likely to be influenced in his views on the second question by his practical attitude toward the first. The philosopher is likely to treat the second question as the more important, and to deal with it on general grounds of the nature of knowledge. On the whole it seems desirable to distinguish the two questions, but not desirable to keep them entirely separate; and in dealing, in a further article, with the second question I shall utilize the conclusions provisionally arrived at in regard to the first.

(*To be continued.*)

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THE PHILOSOPHY OF SOCIAL LIFE

IV. MAN AND SOCIETY

C. DELISLE BURNS, M.A., D.Lit.

PHILOSOPHERS less subtle than those of the Middle Ages feel no difficulty about such words as "and" or such phrases as "member of"; but even to write "man and society" has committed us to an assumption which may not be justifiable, and to say that men are "members" of a community or of a trade union is so alarming a metaphor that it would startle Duns Scotus. It is unwise, however, to ask philosophers what they mean when they feel very passionately about what they say, for the confusion becomes even greater than it was if passion gets into explanation. It is supposed to be obvious that men exist *and* that States and Trade Unions and Churches exist; and who would be so foolish as to raise difficulties about the difference between existence and essence? Many who claim to be scientists with regard to politics or economics suppose it to be obvious that there is an "essence" called "public opinion" or "the will of the people" or "utility"; and what Occamite would now dare to say that entities are not to be multiplied?

We should know more about the nature of social life if we did not unconsciously assume that we already know more than we do. The fundamental issues of the philosophy of social life, therefore, are not the conclusions, nor even the premises, which have been so far analysed, but the assumptions on which both premises and conclusions rest. And it is difficult to dig down to those assumptions, because the only words available are the results of those very assumptions. If one asks what is meant by "social," the word social itself prevents one finding an answer underneath it. So much psychology is now known that psychologists become quite angry if they are asked what psychology is. So much "truth" is "useful" that it makes even philosophers with a taste for social reform become abusive if one asks whether it is "useful" to regard the two as identical. The truth is—but it may not be useful—that the frontier of knowledge and what lies outside it may be more important for our understanding of social life than the whole of what is now contained within it. One of the difficulties in the philosophy of social life is that the assumptions implied in political science and economics are not recognized as assumptions, and to examine their value may require an expedition beyond their frontiers.

We face the frontier, however, from within it. The aspects of

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social life which, in general, seem to be pervasive can be classified as subject-matter either for psychology or for metaphysics, that is to say, "first philosophy." This classification, then, will be adopted in what follows, although the psychological aspects of the problem seems to be of no importance for our purpose here except in providing a new language for the statement of assumptions. It is not a philosophical explanation of beauty, for example, to say that it is an "adjective" of the motor-affective relation; but such a statement may be a better instrument for the discovery of what beauty is than earlier and simpler statements. The only trouble at present seems to be that even philosophers seem to believe that they have found an answer when they have found a new word in which to ask the question.

The psychological aspects of all social life, stated in modern terms, no longer seem to involve atomic individualism. Fortunately, it is no longer necessary to argue that "men" are not atoms in a container called society. There is a mind-group consisting of or formed by—but both phrases are metaphysical—the members of the group. The psychological structure of the group embodies or expresses or *is* the form of communication present; and the most interesting and important form of communication, for our present purpose, is language. All language is communication, in the sense that there is no word whose "meaning" does not express a *social* relation. The word "red," for example, means much more fundamentally a relation between you and me than a sense-datum—whatever that may be! Clearly the word "red" does not mean *only* a relation between you and me, but it means that first and foremost. When I say "red" or you say "red," both of us look in the same direction; and it is much more important that we look in the same direction than that our sensations are similar. No language at all would exist if mental process occurred in a mind taken singly; and it seems unlikely that any thinking, in the usual sense of the word, ever exists or has existed which is not a reference by two or more minds, in which each mind refers to the other at the same time as it refers to the so-called object of thought. Similarly, "meaning" is reference which a word or a phrase has for more than one mind. It is not necessary to suppose that what I "mean" by a word is any more than whatever you can get at by looking in the direction in which my word points for you. All languages, therefore, consist of "pointers" for use in co-operation. What I mean by "dog" depends, as we say, on the universe of discourse; and this universe is the social experience within which the communication takes place. But the words which indicate to you what I am interested in, selected from the vast number of factors impinging upon us—that is, what are called nouns and adjectives—

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are probably not so fundamental as verbs. Psychologically, a verb is, more definitely than a noun or an adjective, a reference to a social relation. It is more "subjective" in the old bad language. And one of the tragedies of logic is the turning of a perfectly good verb into a mere composite of a noun and an adjective, as when the textbook says that "I hit you" is the same as "I (subject) am—hitting you (adjective of me!)." But this oversimplifies the variety of meanings in language. Again, psychologically, language is passionate. That is to say, it has reference to my "motor-affective interest" in you and in the direction in which we are both looking. The pure scientist, if there is such a person, tries even in philosophy to extract and throw away the passion in language; and so we read about $x\,y\,z$ and R^2 instead of about chairs and tables and relations. But the assumption implied in the belief that "facts" can be best viewed by philosophers through formulæ is at least doubtful. The by-products of the meaning of words may be more valuable than the raw material extracted in the making of a formula. One may have left out just what matters in philosophy when one has left out all that cannot be put into a colourless symbol. The so-called "inexactness" of language is not a disadvantage for understanding a very "inexact" universe; and why should we assume that the universe is as tidy as an algebra? But if language is allowed its full weight as an expression of passionate appreciation, then the tertiary qualities—beauty and the rest—are given a more fundamental place in philosophy, and their discovery is seen to come through personal communication.

Finally, language is not merely a collection of words. It is more exact to speak of *a* language as a whole in which the interplay of all the members of a group, dead and living, is expressed. Every language is traditional. The forms of meaning which are available for an English-speaking group are not the same as those available for a Chinese group. Translation is never a complete substitution, although it seems possible for a man to enter into a language-universe other than that in which his earliest experience occurred. But further, not only is every word and phrase a part in the whole which is *a* language, this or that language as a whole is itself a part in a whole structure of behaviour-patterns which are the customs of a group. Each "member" of the group does what he does in reference to what each other is doing at the same time. What is called my action is only part of a "curve," of which the other parts are the actions of others in my group; and thus communication is the characteristic of the mental or psychical. Custom in a group is mental structure. My act is not completed and then added to yours, for each act of each one in a group is modified in its formation by reference to expectation or insight in reference to

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the acts of others in the group. Social life is not a whole of parts, nor even an organism of organic parts, but in another metaphor may be understood as a compound of elements in "organic" chemistry. The elements are "minds" or individuals, and no one can precipitate an individual even by the experiments of religious individualism.

That sympathy or emotional continuity, which is implied in communication through language, is a psychological factor, fundamental in all social life. The names for the relations of the individuals in any such life are attachment, affection, and other such terms. On such relationships are built the various forms of co-operation, which are either transient or customary or institutional; and within this whole psychological structure there are some forms of co-operation which are consciously purposive. But if the forms which are purposive are those explained by such words as "will," then probably neither the State nor the Church nor even most economic institutions can be explained by use of the word "will." Psychologically, it seems likely that the State is not *for* the good life, but *is* the good life; association of that kind is not for a further purpose, but is "its own reward." Even the "will for" the State seems too definite a phrase to represent the psychological factors to which the phrase refers. But clearly we suffer from a lack of words and phrases to explain social experience, for what is not "purposive" is commonly regarded as "determined" or as "accidental." And yet the way in which mental process forms the structures called institutions is probably not either "purposive" or "determined" or "accidental." Indeed, the same kind of process seems to occur as in the painting of a picture or the composition of a piece of music. The State and other such institutions are psychologically "works of art," and works of art are not designed for a purpose.

Allowance must therefore be made for co-operation in fact, which is not designed and not even present to the minds of men assisting one another, after they have had it pointed out. For example, the men who grows the cotton for manufacture co-operates with the Chinaman who wears the cotton clothing made by Lancashire operatives out of the raw cotton; but the co-operation is not conscious, and can hardly be made so, even if it is mental. It seems unlikely that the cotton-picker "ought" to feel his co-operation with the Chinaman, for a vague cosmopolitanism of that kind destroys the structure of immediate contacts and "individualizes" the relations of persons who are parts of the structure of distinct mind-groups. That is to say, the way for any member of a group to the members of other groups is through the whole groups. Psychologically, that seems to be the only possibility, except for

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intellectuals or "schizophrenic" persons. That is to say, although there may be some contact between an Englishman and a Chinaman, nevertheless the more important relation is one between England and China—which are, of course, not mythical entities, but mind-groups, sometimes denoted mythologically. Britannia and Liberty are not indeed young ladies in pseudo-classical costumes; but the figures of myth stand for real factors in experience, which are perhaps better rendered in mythology than in statistical or geographical terms. There are wholes which are groups, national or of other kinds; but no group is impermeable or "without windows." The contact between groups in very barbaric circumstances is quite external. Each has a protective shell. But as civilization develops, groups tend to interpenetration, which promotes vitality in each.

These psychological factors in social life are most obvious in close associations such as the family or the groups of friends. Good company is the highest ideal of social life; a man who is *deraciné* is in hell. But the unit-groups which underlie such complicated mental structures as nations, states, trade unions, and the rest, differ in the intensity of the life they embody and express. Casual acquaintance in a community which has a place for social skill is the first step in a voyage of discovery. The discovery of personality is the cure of nostalgia from which subtle minds suffer; but one dare not in the present banality of social sciences introduce a commentary upon Dante's *Vita Nuova*, for it must be confessed that there are no statistics of passionate personal love. It is understood, however, that in such a situation the whole of experience takes on a new colour, and even chairs and tables seem different from what they seemed to be before. It would be entertaining to hear a symbolic logician render in a formula the statement: "Take, O! take those eyes away . . . lights that do mislead the morn." At another level occurs what is called friendship. This is another kind of discovery of personality, which is essential to the good life; and perhaps all political, economic, and cultural organization is maintained by and exists in the friendship of distinct groups. Obviously it is a more important experience that a man should find friends in his occupation through his trade union than that he should continue to raise his wages through it. But in thus comparing a man's different experiences, the test of importance is philosophical, in the sense that one experience more than another illuminates for a man the nature of the world he lives in and strengthens his ability to live in it.

The position of any "man" with respect to any other is always changing; and what is meant by the "same man" in the different stages of the change is probably different. We say that a new

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person communicating or a new situation "brings out" new characteristics in any man. In some extreme cases a man appears to be "out of himself," either in anger or fear or ecstasy of joy; and always there is more in a man than what happens to be "in play" in any given situation. Again, in dreams or in abnormal states, new characteristics of tendency or of structure seem to be revealed in any man. Indeed, it is believed by some psychologists that sleep is a relief, partly because of the strain involved in waking life in being a member of a society. A man, as it were, can go to pieces safely in sleep, but in waking life he has to hold together and to hold in place the abilities or characteristics useful in his position in the social whole. Thus each man, the so-called "member" of a group, *is* society: he is all the parts he plays, and he plays every part in the group to which he belongs in so far as he puts himself into the position of "the other fellow" in discovering what he himself is. Psychologically, I see myself as you see me when I respond to your co-operation with what I am about to do. The self is a discovery made in communication, but it is not a creation of that communication such that a higher unit or group-mind can be said to exist. Mind-groups are not group-minds, in the old "substance" sense of group-mind, for individuals or "percipient events" are real. The relation of the individual to the group is, however, best seen in the case of the great artist.

The fine arts, or rather the actual "works of art" in painting, music, architecture, and poetry, tell us more both about the nature of mind and about social life than do the puzzles for rats analysed by traditional psychology. That is to say, mind or mental process is what results in Michaelangelo's "David" and Beethoven's "Fifth Symphony." Social life is expressed in these, but not any one is a Michaelangelo or a Beethoven. The peculiar fact, however, for the present argument is that only when social life is vigorous does great art appear. At the beginning of the industrial era the old forms of society were dissolved and each so-called "individual" became an atom in the void; more exactly one may say that the relations of men became superficial. A pervasive ugliness is the characteristic of a superficial society, and perhaps the ugliness exists not only in dress and houses, but also in the shapes of human bodies and the expressions in human faces. Psychologically, the contact of minds in such a situation is the barest impact of one against another. Intimacy disappears. But by contrast with such a barbarism, the Middle Ages show an intimacy and intensity of human intercourse, resulting in the cathedral of Chartres; and in the Renaissance in Italy the mind-group makes Michaelangelo's work possible. A very large field for psychological analysis, therefore, may be found in the conditions of artistic creation. But enough

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has now been said in reference to the psychological factors, the description of which involves making those assumptions which imply our metaphysics or first philosophy.

The question then arises as to the nature of that reality called man or "mind in society" by comparison with other realities, whether "matter" or triangles or the law of contradiction. This, however, is a metaphysical problem which need not be considered by the political scientist or the economist. When the question is asked, "What is social life?" or "What is price?" the answers may be, and generally are, descriptions of certain restricted areas of the actual or the possible; and that is enough for most men to-day, because these are the ages of faith—faith, that is to say, in scientific assumptions. But the question "What is social life?" may mean, "How does that factor in experience appear to be related to stones and stars and triangular and logical contradiction?" And, as was confessed above, we have probably not yet enough evidence for an answer, although some more evidence has become available than earlier philosophers had.

First, social life is the pervasive or inclusive factor in all the processes by which stones and stars and triangles are in contact with us. It is impossible to dissolve away tradition, as Descartes thought he could. But when in any scientific experiment it is impossible to eliminate a certain factor—say, gravitation—it is usual to vary the position of the object affected in order that what cannot be eliminated may be distinguished from the factors being studied in the experiment. So, although we cannot eliminate the social factor in experience, we may allow for it and distinguish it, over against the data. If we do not allow for it, we tend to read as data what are really effects of the process of observing them.

The social aspect of the data of experience has not been sufficiently studied in philosophy. Quite obviously the poetry or painting or music of one age is not that of another, and these are the records of what was experienced—these rather than the pale ghosts of mathematical calculation. The language of one group or period is not the same as that of others, and each language is the instrument through which men perceive and feel the facts. It is not accident and not unimportant that Aristotle thinks in Greek and Kant in German. The tragedy of the categories is a perpetual reminder of that. No one who knows any philosophy seems to be able nowadays to think in mediæval Latin, and so the mediæval philosophy appears to be a senseless gabbling. We look through works of art—including, of course, language in its finished forms in poetry—to see the only things we can see; and not all the strength of a Leibniz can reduce such passionate words as "harmony" to the colourless ghostliness of a scientific formula. Every philosophy is the philosophy of a

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particular social group, and the philosophy of social life, therefore, is not irrelevant nor unimportant for "first philosophy." To erect a metaphysical system out of the child's building-blocks of contemporary mathematical symbols is childish, unless we allow for the Arabs who worked at the symbolizing of numbers. We see only what we are able to see, and what we are able to see depends upon the social group to which we belong.

But clearly we see what is there to be seen. If Occam saw one thing and I see another, that *may* not prove either of us mistaken. Error and illusion occur, but the data of experience are sufficiently numerous for each of many social groups to "get at" real data without actually getting at the same data. In a Kantian sense, perhaps the understanding makes Nature, if that means that we can see only what we are able to see; but the understanding does not create its object, since what we see is there to be seen. The point, however, for our argument here is in the word "we." The things seen are seen by a group. The understanding is social; and here perhaps is the ground for some moderate forms of Pragmatism. Why we see one thing and not another is probably because of the direction in which we are looking, that is to say, our common "purpose." The sort of truth that matters to us is the truth that is useful—to us; but, of course, the fact that it is useful to us, and that another truth is not useful to us, does not show that truth is utility, since what is not useful to us may be very useful to some other group.

Now the general character of the factors that are not mental should be rendered in such a way that their impinging upon a whole group experience is made obvious. A certain unity of stones and stars and triangles is indicated in that they are all found together. They are related, that is to say, relation is pervasive. But so also is distinction of one from the other; and although some factors are derivative from others, as green from blue and yellow, there are many factors which cannot be assumed to be more or less fundamental to the structure of the real world than others. The danger for a philosopher lies in the attractiveness, for his type of mental process, of certain kinds of factor. Thus triangles may have a superior attractiveness.

But it is dangerous to begin philosophy with statements about such pervasive characteristics as space-time, because these statements seem to omit reference to the emotional or motor-affective, and also to the social aspects of all experience, whether that of immediate or that of very abstract perception. The measurement and duration of "things" is not more fundamental than their beauty or goodness. The so-called values or tertiary qualities are not derivative; nor can they be "explained" as emergent from

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space-time, any more than the effectiveness of a Beethoven melody can be "explained" by analysing the vibrations of air which it causes. The "red patch"—presumably an English letter-box, which the philosophers of sense-data adore—has motor-affective aspects much more important than its intellectual effects. Beauty is not a subordinate characteristic of "things," but is probably more significant of their nature than is extension or duration. Similarly, Hegel's Being and Becoming are too intellectualist.

There is some connection between being beautiful and being round or long-lasting, and one *may* emerge from the other; but "emergence" is a new word which is sometimes used, not to explain but to hide the fact that no explanation has been found. And therefore it is dangerous to be satisfied with a conjuring trick by which everything appears to come out of everything else, like rabbits emergent from a hat or baggage from a "little Austin." There is always a suspicion that the rabbit emerges which the conjuror had previously inserted. And so Deity emerges. The larger problems of metaphysics, however, cannot be discussed here; it is enough to point out that the data of experience are not quite so unexciting as mathematical and physical theories seem to imply.

We must, however, begin somewhere, and there is no objection to beginning with mathematical or physical concepts, if it be understood that we could equally well show how space-time is emergent from beauty. The connection of realities is not a one-way route. But there are two quite distinct factors involved in the connection between the "factors of fact": one is the relation of the data of experience, in which clearly the beauty coexists with the size of an object presented; the other is time or duration. And it may seem that the relation of events in time or duration *is* a one-way route. It cannot be denied that history is a reasonable study, but history is not metaphysics. The conception of emergence which attempts to derive the "values" from the "facts" seems to read history into metaphysics; that is to say, it seems to imply that a factor is more fundamental which occurs *before* another factor. What is more fundamental may be taken to mean more "real"; and it is to be feared that some modern philosophers have not escaped from the old error of taking "real" for an adjective and assuming grades of reality. On the other hand, what is maintained here implies that, even if "mind" appeared later in history than "matter," it does not follow that the *metaphysical* explanation of mind can be derived from its relation to matter any more than the metaphysical explanation of matter can be derived from its relation to mind. Similarly with beauty or deity in relation to space-time. There is no one-way route for metaphysics.

A second section of philosophy which may be influenced by the

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philosophical study of social life is that which is concerned with "mental process." This is assumed here to include thinking, seeing, feeling, and the rest of that group of factors. Now, many of the difficulties of explaining mental process arise from the assumption that there is an obvious two-term relation, subject-object, thinker-thing. Thinking and the rest are assumed to be names for such relations; and whenever a philosopher has started upon an expedition to discover either one of the two terms, he has come back with the story that there is nothing there! Hegel said the "object" was a ghost, and Holt said the "subject" was. But why should we assume that thinking is a relation, and, above all, a two-term relation? Largely, of course, because of our language and its structure, as affected by mediæval metaphysics; but to explain a bad habit is not to excuse it. The best of modern philosophers find it hard to escape from the mediæval theory that there is "something which thinks," and it must not be *assumed* that there is not. But perhaps thinking, in so far as it is a relation, is a relation of minds within a group. Even seeing or other sense-perception appears to be so different in a dog and a man, and, in fine art, so different in a European and a Chinaman that seeing also may be what it is in each man because of the group to which he belongs. It is assumed in this, however, that seeing is *not* the "bodily" reflection of an object in an eye, which clearly is not a group phenomenon. Seeing is a form of thinking, no less but no more "bodily" than thinking. But one should refrain from further speculation in this region, for it seems to enrage philosophers if it is implied that the nature of mental process is not obvious.

Suppose that "seeing a tree" is, in a sense, "being a tree,"[1] and that feeling a hard book is "being a hard book," then mental process is a form of "being real," not derivative from terms in a relation. To ask "how knowledge is possible" implies "how, with these assumptions (a mind and an object), can this situation (an object in a mind) be possible?" And in spite of Kant's effort, he does not seem to have proved that *with his assumptions* his theory of knowledge *is* possible. But there was no reason to ask "How is knowledge possible?" any more than to ask "How is a tree possible?" Trees, indeed, are most unlikely, if no "events" have any character; but trees exist. The assumptions implied in the old epistemology were wrong. Similarly, if we *assume* that seeing is *not* thinking, it is impossible to close the gap between them. But "seeing a tree" may be "being there or thus," and in two ways,

[1] There is no objection to the phrase "seeing a red patch," if the "red patch" has emotional characteristics; but no one ever sees a pure "sense-datum" if a "sense-datum" is a symbol in a formula. We see post-boxes, not red patches.

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namely, from inside (empathy) and from outside, if the spatial metaphor may be excused. Now all "there" or "thus" is relative. No absolute "there" exists. Class names (universals, etc.) are delimitations of each "there" or "thus" in relation to one "field" or another. "Tree" is the name for the *locus* of a changing particular in a changing relation, and most, if not all, class names are *loci* in reference to a social structure. That is to say, universals are mental perspectives, objects perhaps, but by no means "eternal," whose "ingression into events" is the social perspective. Perhaps the relations of each event to other events are infinite in number; but in any case the particular groups of relations which are the characteristics named in the definition of it are those which appear in the adjustments to it of groups of minds. I "place" an object by acting so that my relation to it is a function of my relation to you and others. The justification for such an hypothesis requires much more argument; but for the present purpose it is enough to suggest that social philosophy may be important for the metaphysics of "mind" or "thought."

There are treatises on mind which never even refer to social experience, and there are speculations about mind which depend upon ghost-hunting or table-rapping, and not upon the unexplored regions of ordinary language and ordinary affection. Why should it be more "psychical" if a table enunciates a platitude than if a dustman empties a dustbin? Presumably because "mind" is still assumed to be a sort of "geni" in a bottle, called a body. Even "social" psychologists seem not yet to have discovered social life, for they manœuvre in the mists of instinct when they might consider language. They seem still to believe that "social" means what is common to particulars called "minds," whereas in fact it means the structure "between" minds.

Short of a new theory of mind, which might be the result of a study of the philosophy of social life, there may be new theories of art and of science, in so far as science is a "work of art." And these would probably affect our ethics or theory of morality, for we have suffered too long from the conception of morality as adherence to a law. The conception of purpose as the conscious approach to the preconceived end of a process probably needs correction; but at any rate, with regard to "the good life," as it is called, a closer study of social life would show that (1) what is sometimes conceived by philosophers to be a means is in practice an end, as when men join an army for good fellowship; and that (2) there is no preconceived plan or end in the best and finest lives, just as there is no fixed idea in the mind of a great artist when he composes a symphony.

With the conception of a "moral law" goes the conception of

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obligation and command, mainly negative command as to avoidances. But all such conceptions belong to a state of social life which is primitive. Kant is as obsolete as Moses, for morality is an art; and a fine quality of character or personality is like a work in one of the fine arts. Perhaps there is some sense in the old phrases, for the "moral law" may be to morality as the laws of perspective are to painting, and what a barbarian calls "obligation" may be what a civilized man calls attractiveness. But without an interpretation so drastic as almost to reduce the ancient phrases to ghosts in a graveyard, it is impossible to use, as explanations of the ideal, the taboos of an earlier age. To a civilized man murder is not attractive, and he feels no obligation or categorical imperative preventing him from committing murder. The whole flow or energy of social experience is misrepresented by the metaphors drawn from law in primitive communities. Even the metaphors of social authority drawn from "will" originate in obsolete autocracies.

But if the arts as creative and works of art as the best expressions of creation may be our guides in understanding moral experience, then perhaps "good" is a subordinate and somewhat misleading form of beauty. The ideal should be rendered in terms of the beautiful, whether we discuss social situations or moral character or conduct. It would then be obvious in ethical theory, as it certainly is in practice, that there is no excuse for being a "good" man who is utterly unattractive! And as a serious result for general philosophy, the finest social products which are works of art would be understood to be revelations of the characteristics of the world. Certainly more can be learnt about the world from the "David" of Michaelangelo or the "Fifth Symphony" of Beethoven than can be learnt from any scientific formula. Art is not a substitute for philosophy; nor will poetry excuse bad reasoning; nor is philosophy a Pasteurized form of religion. But if there is such a thing as religious consciousness or æsthetic appreciation, it may provide material from which philosophy can arrive at conclusions. What the material is cannot be discussed here, but we cannot obtain it except through social life. The philosophy of social life, therefore, besides correcting the specialisms of economics and political science, besides discovering principles which hold with regard to all the relations of a man to other men, may also be useful in illuminating certain dark corners in the experience all men have of the world of stars and triangles. But the philosophy of social life requires an examination of all those inherited assumptions about thought and mind and society which imply that we know more than we actually do. Progress in thought, as in experience generally, consists not in rearranging acquired possessions, but in advancing beyond present frontiers.

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PHILOSOPHICAL SURVEY

PHILOSOPHY IN FRANCE

BERGSON: SOME RECENT APPRECIATIONS

"M. Henri Bergson is in the lineage of great creative minds in the domain of pure philosophy, a lineage which, in the modern world, derives from Descartes through Maine de Biran in France, and through Schelling and Hegel abroad. To what rank he should be assigned in this Pantheon, we, his contemporaries, are not qualified to judge; it is too difficult a question for us who are so near him—one or two generations, perhaps a century, must lapse before an estimation may be reached. But each of us now can speak of the influence Bergson exercised over his own thought, and the memory of the arresting impression which I received while reading the *Données immédiates* is still very vivid to my mind. Equally profound was my impression too in studying the works that followed. However different may be my field of study from that of the author of *Creative Evolution*, however my methods and results may differ from his, I feel emphatically that my whole work is impregnated with ideas that have come to me from him." So writes M. Emile Meyerson in the *Nouvelles Littéraires* on the 15th December last—an issue devoted to Bergson on the occasion of his being awarded the Nobel Prize by the Royal Academy of Sweden. This issue is of extraordinary interest for the many side-lights it throws, not only upon the personality of Bergson, but also on the very diverse excellences enshrined in his works. It is characteristic of France that honour should be done to a *grand esprit* through the democratic medium of its leading literary newspaper.

The influence of Bergson's thought has, doubtless, been more fecund, continuous, and radical in France than in England. For us, at the moment, his work has the air of being "dated." Since the war, permitted once again intermittently to think, we in England never resumed our study of Bergson with any vigour, nor took up again the strands of our criticism. But the impression remained. Certain basic conceptions of the constructive parts of his work (*e.g.*, the character of duration) have reappeared in modified form, though the results to which they contributed could hardly be called 'Bergsonian.' But in France, the influence of Bergson has had a different history. Post-war philosophical publishing and the articles in the *Nouvelles Littéraires* show that interest in Bergson is as virile as ever, and that cultivated readers in his country are no less appreciative than in the days when his amphitheatre at the Sorbonne was all but *changé en salon*. There has further been a most marked change during that decade in the attitude of one section of the professional philosophers. And the consequences of this change are likely to be far-reaching—to touch not only the measure of philosophical fortune that Bergson is destined to enjoy, but to reach the whole current of contemporary thought in France, so as, if not to direct it, at least to modify it, and perhaps eliminate completely the unduly protracted influence of Comte. Before the war philosophical research in France emanated for the most part from two camps—the Church and the Universities. Much of the work from the former was in philosophical scholarship, and occupied more particularly with mediæval

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thinkers, while commentary on classical and modern philosophers as well as the bulk of 'original' work issued from the Universities. Productions from the one source did not meet with a keen appreciation in the other camp—and critical exegesis on the Scholastics, for instance, were decidedly unwelcome as doctoral theses at the Sorbonne. The outlook to-day is certainly different on both sides. It is no longer thought incredible that mediæval thinkers should have anything of moment to contribute to the solutions of present philosophical difficulties, nor that Thomist philosophy should be capable of a re-interpretation which does not involve any essential alteration of doctrine, and is not inconsistent with the principles presupposed by modern advances in the empirical sciences.

Professor A. D. Sertillanges, of the Institute, a Catholic philosopher, and eminent Thomist scholar, is able to say [1] "the service M. Bergson has rendered to Catholicism is doubtless not a direct one, but indirectly he has opened out the way in two respects, by setting obstacles aside and by developing happier solutions than those previously current." The "obstacles" Bergson has removed are "the false intellectualism of Renan, the semi-scepticism of Kant, materialistic or pantheistic monism." From a basis of scientific fact, he has ruined "the religion of science," for "an arbitrary intellectualism" and a materialism he has substituted "a spiritualist realism capable of extension and of a religious culmination in Christian spiritualism. By brushing away these hindrances morals and religion are made possible." The absolute and qualitative distinction he draws between animal mind and human self, which stand as "limited to unlimited," as "closed to open," raises a question which Bergson himself could not or would not pursue to the end. For what is the human soul open out toward, if not "sur des destinées 'sui generis' "? This is not the first time that a philosophy had to be completed by later thought. "The great pagan Aristotle was 'baptized' by St. Thomas, could not M. Bergson be baptized as well?" asks M. Sertillanges. The philosopher's chief works, it is true, are "on the index," but this does not imply a wholesale condemnation of their doctrines, and still less of their "friendly interpretation" (!) It is not then surprising to find Catholic philosophers like Le Roy and Chevalier are easily able to regard him almost as an apologist of the Faith, especially since "everything concerning metaphysics tends to become religious, especially when the metaphysics is at bottom psychological."

Professor L. Brunschvicg of the Institute recalls[2] that Ravaisson was the predominant influence in the French universities at the epoch when Bergson entered the Ecole normale. It was Ravaisson who declared to the physicists that the inert was to be explained in terms of the vital, to the biologists that life can be understood only in terms of thought. And this sense of *actualité féconde* was brought to a still sharper issue in the work of Lachelier and Boutroux. The latter's study of contingency attempted to show that the abstract concepts of scholasticism corresponded "to nothing but a phantom of science, born and living only in the mind of the literary man." The presuppositions and explanatory concepts of mechanism and rationalism were found inadequate. In place of the substantial conception of the self, Bergson

[1] "Bergson devant le catholicism." *Les Nouvelles Littéraires*, No. 322, 15 décembre, 1928.
[2] "Le Bergsonisme dans l'histoire de la phil." (*ibid.*). Further articles in the same number: "Bergson à l'Ecole normale," by Lévy-Bruhl; "B., élève de l'Ecole normale," by C. Pfister; "Mes rencontres avec B.," by G. Papini; "L'Intellectualisme d'H.B.," by J. Chevalier; "L'Intuition bergsonienne," by J. D. Berrueta; "Ce que la biologie doit à B.," by E. Rignamo; "B. et la biologie du système nerveux," by R. Mourgue; "Le style intérieur d'un philosophe," by A. Thibaudet; "B. au Japon," by S. Kuki; "B. à Genève," by J. Luchaire; and "Les idées de Bergson en psychopathologie," by E. Minkowski, the last in *Les Nouvelles Littéraires*, le 29, déc., 1928.

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substitutes the view of a spiritual reality which is immanent in the continuity of its own phenomena. To represent this view, he found it necessary to avoid the mediation of all symbolism, the existence and character of which are determined by the needs of our social life. Malebranche had drawn an opposition between the infinite and indivisible extension of intelligible space and the externality of the parts of material extension. Spinoza in a letter to Meyer had expressly declared the absurdity of expecting to reach continuous duration by combination of moments externally related. And Bergson's thought from the very outset breaks away from the parallelism between extension and duration on which Cartesian conclusions depend. Apprehension of what is eternal through intuition and *amor intellectualis*, the last word of Spinozism, appears on the horizon in Bergson's "intellectual sympathy." "If there is a *philosophia perennis*," concludes M. Brunschvicg, "it is not made up of disjointed fragments of obsolete systems . . . the eternity of philosophical speculation is shown by the renewed reality it lends to the permanent values of the mind, lifting them out of the historical forms and transitory manifestations in which they seemed embodied."

No philosopher of our times has received the enormous attention, in the form of appreciative and critical papers and monographs, that has been bestowed on M. Bergson. And the stream of print, though thinner to-day, still trickles on. In the main, the happier efforts have emanated from France rather than England or America, and many, like Professor Chevalier's,[1] have their own particular merits. But in the face of this stream of exposition, different in manner and matter as in emphasis, one is led to ask what it is in the writings of an original thinker that calls for such impressive expenditure of energy. The answer for many will, I suppose, rest on just the fact that the thinker *is* an original one. The expository performance that is to say is necessary, and so stands in principle justified, in so far as it facilitates a fuller insight and more exact understanding of an author's meaning, and its value may be enhanced in so far as it proceeds to show what parts of doctrine are open to fuller development, what points are definite contributions to our acquired sum of knowledge, and what points call for revision or rejection. The charm of Bergson's writing cannot be questioned nor can his command of suggestive (and elusive!) imagery. The qualities that confer literary distinction and the value of a work of art are richly present in it. The function of philosophy, however, is not to give an imaginative picture of the universe, but to try and attain knowledge about it. Now the experience of many readers has been largely one of failure in understanding exactly what this brilliant writer is often asserting. Some philosophies would seem to be inherently difficult, even when expressed with utmost possible clarity and precision—and perhaps Bergson's is one; but one feels that even if this be so, considerable embarrassment seems to result none the less from his device of pictorial representation. If it is certain that a fact is inexpressible and incommunicable, if the only symbols that can express clear meanings are vitiated *de radice* by their 'intellectual origin,' so that they can only misrepresent and not express such facts either truly or in a way open to correction, then the philosophy culminating from such a state of affairs ought surely to be, not constructive and boldly affirmative, but mainly negative and extremely sceptical. So not unnaturally one looks to the book of Bergson's friend and admirer, M. Chevalier, as one has looked to others in the past, for a presentation of this most elusive of modern thinkers which shall of all things be clear, even if less

1 *Bergson.* Collection: Les Maîtres de la Pensée Française. By JACQUES CHEVALIER. Paris: Librairie Plon. 1926. Pp. xii + 317. Fr. 18.

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delightfully presented. And this is reasonably to be expected since his book is based upon a course of lectures on Bergson given to foreigners at the University of Grenoble in 1924, and since he declares in the introduction "the exposition attempts only to be exact, that is, to give the right meaning of the doctrine. . . ." No claim to completeness is made; the work is rather a communication of what has most influenced the writer's mind, what has contributed to awakening and directing his own intellectual tendencies. "It is a Bergson of my own in some sort, I could almost say *my* Bergson that I introduce in these pages."

M. Chevalier is at pains to dissipate misconceptions that have grown up around Bergsonian "intuition." Those who have described his epistemology as "intuitionist," even though they have had recourse to Bergson's own definition, have seldom given themselves the trouble of "looking minutely, impartially into the detail, the applications that Bergson has made of it." Now the sense of a philosophical term is to be gathered not only from its formal definition, but also from the actual employment that is made of it. Some have tried to dispose in advance of any painstaking inquiry of this sort, by defining "intuition" as a mystical process an *ir*rational or even *anti*-rational process. But nothing is further from Bergson's meaning. True, like most great philosophers, Bergson is a mystic; but if 'mysticism' be held to imply a negation of science, Bergson tells us that "from beginning to end his doctrine is a protest against such 'mysticism,' " it is, indeed, "an attempt to establish connection between metaphysics and science, to connect them so closely as to make metaphysics itself into a positive science, susceptible of a precision and progress similar to those which characterize other positive sciences." M. Chevalier's efforts to characterize Bergsonian intuition more determinately, however, do not seem particularly successful. He looks for illustrative help to Pascal's notion of 'the heart': "We know truth, not only by reason, but also by the heart . . . and it is on these deliverances of the heart and of instinct that reason must rest." But is this not trying to lighten the darkness with shadows? What clearer idea can be formed of Pascal's *cœur* than of Bergson's intuition? It is of little help to be told that "Intuition is like the heart: *elle sait*!" However, though distinct from discursive thought, intuition, is not to be taken as a separately active mental function: it neither precedes nor excludes, but emphatically presupposes rational activity, resembling more an acquired intellectual skill of some sort: like a physician's ability in diagnosis—"it is acquired only slowly and laboriously." So, M. Chevalier repeats, "Intuition and discursive thought cannot be separated without detriment to both."

The fundamental conception in Bergson's philosophy, however, is not that of Intuition, but that of *Durée*: this the philosopher himself emphasized in a letter to Höffding: "Any résumé which does not deal first of all, and does not continually return to, what I consider the very centre of the doctrine—*i.e.*, intuition of duration—will distort my views in their uniformity, and thereby expose them to a mass of objections . . . the representation of heterogeneous, qualitative, creative duration, is the point from which I start, and to which I constantly return. Representation of this *durée* to ourselves," he continues, "requires considerable mental effort, a breaking with many forms of thought; something like a new procedure in thinking (for what is immediate is far from being what is easiest to perceive); but once this representation has been reached and possessed in its *simple* form (for it must not be confused with representation by concepts), one is forced to change one's point of view about reality." Reality, which is simply and solely *durée* is experiential, and from its inspection two results follow: a positive one, which

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is an acquaintance with its essentially *qualitative* character, and a negative one—that it is not divided nor quantitative, but continuous. But the knowledge we have of duration in natural science, *i.e.*, knowledge of movements, is always a knowledge of something quantitative. Thus Bergson concludes there are two ways of "knowing" duration—as it is, and as it is conceptually translated—though this latter should not be called knowledge at all. Physical propositions about motion, for instance, though based upon real duration, radically misconstrue its nature by attempting to express it through conceptions of measurement. For these represent what is known as possessing a discrete and divided character of which it is really not possessed. A description, in symbols that can only correctly represent spatial properties, of what is essentially non-spatial, cannot fail to be a misrepresentation, cannot give us knowledge of the genuine character of what is directly revealed in intuition. Any method, theoretical or practical, which is essentially a method of measurement, can only apply to what is measurable or quantitative. But the duration we directly experience is non-quantitative, and so unmeasurable. Hence to describe what is not amenable to measurement in terms or units of magnitude is to represent it as essentially other than what it really is. For real duration is substituted a symbolic image derived from perception of lines and planes. Duration then can only be known intuitively, and this involves that we first dismiss from our minds all spatial symbols which scientific description interposes between us and duration. So in general, all knowledge of what is real is intuitive: all others kinds of 'knowledge' as attained in the sciences is said to be relative, since it depends upon symbols which are structurally ill-adapted for imparting accurate knowledge about the real. Every image of an object, according to M. Chevalier, is "imperfect." To illustrate this he strangely suggests that a series of photographs of a town have real value only for somebody who has seen the town! (He does not seem to distinguish between "imperfect" as meaning (i) not exhaustive (but veridical); and (ii) neither exhaustive nor veridical—and seems to suppose that (i) implies (ii). If the photo is "imperfect" as a substitute for the town, surely a particular visual appearance (limited by date and perspective) is little less so. Images will, of course, be imperfect in not being exhaustive representations, but M. Chevalier shows no reason for believing them not to be veridical and representative so far as they go.

The comparison of intuition with imagery is presumably instituted to enable us to describe intuition negatively, since nothing positive can be said about it except in metaphor. Although intuitive apprehension is an immediate and non-conceptual activity, it can none the less only occur after long practice in discursive thought, of which it is the issue and completion. Bergson explicitly wrote in these terms to the author in 1920: "You are quite right in saying that all my philosophy since my first *Essay* asserts, as against Kant, the possibility of supersensuous intuition. In taking the word 'intellect' in the very wide sense that Kant does, I could call the intuition of which I speak 'intellectual.' But I would prefer to call it 'super-intellectual,' for I have thought it necessary to restrict the sense of the word 'intellect,' and because I reserve this term for the group of the mind's discursive faculties originally destined to reflect about matter." This letter does much, if not to dispel doubts, at least to express a more definite meaning. "Intellect, then, is a specialized mental function, a faculty of the useful rather than of the real one which is satisfied only when it can reduce things to, or express them in terms of, fixed symbols, concepts, or laws; *i.e.*, to measurable magnitudes or quantities. Such Berkeley declares to be the character of all science, and since matter alone is measurable, the effort at intellectual reduction or

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explanation consequently expresses movement in terms of space, sensation in terms of physical excitation, thinking in terms of its conditioning cerebral processes, and freedom in terms of the mechanism it employs. Such symbolism of mechanics we accept as being more intelligible to us than the immediately given realities themselves."

The first reality disclosed to us in intuition is the self, and it is from this that we must pass to knowledge of our own bodies, life, matter, and eventually the universe. But though Bergson finds genuine duration exemplified first in psychological duration, he does not reduce all duration to this type. Time in the universe is not so reducible, but it is not unreal because it has not the richness of psychical duration, for it possesses the most fundamental characteristic of irreversibility. So determinism increasingly gives place to an indeterminism, to a genuine contingency that is not mere absence of determination. In this way, too, freedom gains a foothold. While physical causality implies that nothing is caused to exist in the interval separating two moments of time, freedom or psychical causation, on the other hand, implies "creation" by the act itself of something which did not exist before it. So genuine *durée* is unpredictable, just because it is creative. If then, by marking off the decline of intelligence from intuition, in its progress to damnation (or should we say 'justification'?) it is no longer found to represent clearly what it is applied to, and what it makes—"*elle s'est mécanisée*," and remains nothing but a counterfeit of genuine intelligence. And, we are told (without, however, a shred of supporting evidence), that our reason, left to follow its natural bent, is an activity oriented simply towards action, and therefore towards matter!

M. Chevalier does not content himself with simply presenting different results and doctrines that follow from this general view of knowledge and reality. He shows felicitously how such results come about, he exhibits the fecundity of the method in its actual applications, hence, indirectly, its strength and its weakness as well. The study of the immediate data of consciousness terminate in two definite conclusions: the irreducible, qualitative distinctness of the self and its body, and the self's existence as being essentially an existence through duration and not in space. Yet we think *en fonction du corps*. The possibility of explaining the co-existence of mental with bodily activity, the theme of *Matière et Mémoire*, requires that we first consider the peculiar character of that duration which constitutes the self's existence. Ordinary psychology cannot give us the qualitative information we are seeking here, for the same reason that physics cannot inform us of the genuine character of natural duration. Psychological states interpenetrate or overlap in such an intimate way that we can refer to 'particular' sensations, 'particular' images, 'particular' desires, etc., only at the cost of introducing into our account suggestions of separateness, discreteness, and plurality. But the self's duration is a qualitative, not a quantitative, multiplicity: its moments do not form a series of discrete terms externally related. And it is precisely in this form that the self is disclosed to us on inspection, as "an invisible, spiritual existent," and, like time itself, indivisible. The notion of a succession of particular mental events then is one which misdescribes the character of what is empirically given—precisely because it describes it through spatial metaphors. We cannot express what is non-linear and undivided in linear terms. M. Chevalier seems to find no difficulty about all this, but apparently regards as empirically certified what to many is but doubtful assumption. From one end of Bergson's work to the other two assumptions lie embedded: *viz.*, that what is real is directly disclosed as being existentially undivided, and that what is not in fact divided cannot be legitimately divisible in thought.

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And they depend, one suspects, upon a failure to distinguish between existential judgments and judgments of quality. I can see only one condition under which Bergson's thesis would be incontestibly true, *viz.*, if the real were substantivally and adjectivally single—in a word, if *la durée* were of a single, homogeneous quality and manifested no successive variations in intensity. Bergsonian *durée*, however, manifests qualitative *multiplicity*.

One wishes M. Chevalier had adduced grounds to show why what is radically multiple, and is intuited as such, cannot be truly described in terms implying plurality. For to assert numerical plurality (whether of 'moments,' or of 'mental states') does not entail an assertion of even qualitative difference, let alone of otherness. He does not show why we should suppose what is existentially plural to be completely independent. There seems to be a failure to recognize three distinctions, *viz.*, (i) between being 'discriminable' and 'existentially separate,' (ii) between being 'numerically different' and 'existentially different,' and (iii) between 'spatially diverse' and 'numerically diverse.' And it may be for this reason that he is so unwilling to define what he means by 'liberty.' He holds that freedom is an incontestible fact, and the reason adduced turns on a distinction between time and duration, and on the character of our own activity. Past time may adequately be described in 'spatial' images (*i.e.*, as being composed of discrete moments serially ordered), but not so the time which is at present enduring. Now it is only in this present *durée*, and not in past time, that free volition occurs, so liberty is a fact about *durée*. This freedom, we are told, is inexpressible, every definition of it prejudices it in favour of determinism. "We are free when our acts emanate from our personality, when they express it, when they have that indefinable resemblance with it which is sometimes found between an artist and his work." We are not determined in volition because what we have yielded to is our whole character, and "our character is still ourselves." But not all our acts are free, and to meet the difficulty of accounting for those acts performed, *e.g.*, in violent anger, or from hereditary vice, Bergson distinguishes between a "fundamental self" and a "parasitic self," which continually trespasses upon the former. So "free acts are rare: many live and die without having known real liberty." But this admission seems fatal. Is this act of 'hereditary vice' or 'violent anger' not expressive of the personality in question quite as much as others? Further, why is it not equally a pure distortion of empirical fact to disengage this vicious act from *la durée interne*, just as much as to separate out any other, and to oppose it to numerically and qualitatively different actions? M. Bergson seems to have forgotten his own warning here, and M. Chevalier has forgotten to remind him of the radical error that ensues "if we consider in turn, by an effort of abstraction, the self that feels and thinks, and the self that acts, in concluding that one of them weighs upon the other." The distinction between a "parasitic and unfree self" and a "free self," however, depends upon our performing such an abstraction. The hypothesis of determinism is disproved at the very outset from a consideration of *durée* itself, and the existence of free activity is demonstrated by exhibiting the possibility of a free contingency in nature. "In this way allowance is made for an increasing sum of liberty in the world: whereas physical causation implies that nothing is created in the moment separating two intervals of time, in the passage from the one to the other: liberty or psychical causation implies 'creation' by the very act of something which did not actually exist in the antecedent interval."

Bergson's conception of the self is exceedingly difficult to understand clearly, and though he so often refers to it, little is forthcoming to show

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what is its essential nature and structure and in what relation it stands to psychical *durée*. This is a point one had hoped M. Chevalier would illuminate, but he is no clearer about it than Bergson. Psychical duration is *erlebt* by each of us. It is qualitatively diverse, but is not split into a plurality of separate strands of duration such that I could say "my" duration (in which I exist) is one, and "your" duration (in which you exist) is another. Since this cannot be said of internal duration and certainly can be said of selves, 'self' and 'internal duration' are not synonyms. If duration is logically priori in what manner are discrete selves "situated" in it? On this question M. Chevalier is not very helpful. Collecting what he tells us of the self, we learn that it is (i) a 'private' and not 'public' object of knowledge; (ii) other than its activities; (iii) invisible; (iv) "a thought"; (v) "la liberté par laquelle je me replace dans la pure durée de ma vie intérieure"; (vi) constituted by "individual tension" (which is also said to constitute our liberty and our personality); (vii) what 'lives' in duration, yet (viii) transcends it in some way since it "possesses and dominates it." This result of "our effort to set aside the symbol of the self" and "to apprehend the self in its own proper duration" seems to have led us into desperate straits: what is permanent and peculiar in each individual seem to be merged into a process or duration, which, apparently, is identical with what we ordinarily call the history of the individual. But really individuality is lost in this stream of *durée interne*, this indivisible, mobile unity or continuity. No explanation is forthcoming of *what* it is that intuits this *durée* so far as I can understand. "Il n'y a que la conscience au monde qui soit une, simple et indivisible," and this consciousness which is not individual, but universally pervasive, is other than *la durée externe*. The two are in fact co-implicative.

M. Chevalier finds Bergson's account of the relation of self to body a distinct improvement on past views, one which "renders materialism untenable in all its forms and confirms spiritualism," but it further "corrects and completes classic spiritualism." "Aristotle had united soul and body, form and matter too closely, and so made it difficult to explain the survival of memories, even though he conceived them as bodily functions. Descartes guaranteed the self's continuous existence, but at the cost of separating it from the body so completely as to be unable to explain how they are ever connected. Bergson, better than Aristotle, and like Descartes, distinguishes soul from body absolutely, but instead of separating them as Descartes had done, he demonstrates the intimate union in which they exist, as Aristotle did, and better than he did." Most certainly Bergson admits the distinction, but I question whether M. Chevalier has shown us that he manages to unite them into the composite individual—the embodied self—more clearly than Descartes had done! M. Chevalier certainly succeeds in reawakening one's interest, but it is an interest which raises once again the sort of difficulties that were current in the hey-day of Bergsonism in this country, and I cannot feel that he has really disposed of them.

S. V. KEELING

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PHILOSOPHY IN GERMANY

SUMMARY: *This survey first deals with* The Downfall of Values, *a collection of essays by Max Scheler, late Professor of Philosophy at Cologne. It then summarizes a small book on* The Controversy Concerning Causation in Recent Physics, *by Hugo Bergmann, for which Einstein has written a preface. Next it considers Georg Stieler's inquiry into* The Individual and the Mob. *Finally, it deals with Wilhelm Worringer's contribution to æsthetics in his* Abstraction and Empathy.

The Downfall of Values,[1] by MAX SCHELER, whose death I recorded in my last survey, contains a number of essays on different topics. But, though many of the essays differ both in matter and in treatment, they all quite evidently exhibit the same outlook and the same fundamental principles. Scheler writes in his foreword that his use of isolated essays signifies that systematic unity must arise anew from the depths of each subject. The phenomenological outlook, in which all basic conceptions are referred to ultimate foundations in experience, is the ruling principle. Two of the essays will be considered here in detail—"*Ressentiment* in the Construction of Systems of Morals," which takes up 191 pages of the first volume, and "Idols of Self-Knowledge," which takes up the first 140 pages of the second. Reference will also be made to other works of Scheler as relevant occasions arise. Among the remaining essays, those on tragedy, feminism, and the *bourgeois* may be mentioned to indicate the diversity of his subject-matter.

In his essay on "*Ressentiment* in the Constructions of Systems of Morals," Scheler uses the French word because he cannot find a German equivalent. The essay is a discussion of Nietzche's thesis that *ressentiment* is the main source of current moral judgments, including those of Christianity—Christian love being described by Nietzche as "the finest blossom of *ressentiment*." Out of vengeance and hate, Nietzche writes, rose Christian love, not as a repudiation of the thirst for revenge, but as its culmination. What is *ressentiment*? It involves the repeated living through in later experiences of a hostile, emotional response to another person; and the effect of the repetition is both to strengthen the emotion and to bottle it up. An impulse to revenge is the most frequent starting-point, and envy and malice help it along. But *ressentiment* itself comes into being only through the consciousness of impotence, and therefore flourishes among those who are servants and oppressed. A badly treated servant, who can give vent to his anger in the servants' hall, will not feel *ressentiment*; but if he has to conceal it behind a cheerful face, the poison will begin to work. *Ressentiment* is rampant in a society such as ours where rights are nominally equal but really different. Apart from the individual and social conditions of its growth, there are certain 'situations' which are likely to provoke *ressentiment*—among these are the relation of the older to the younger generation, and of younger children to the first-born son. Women usually find themselves in such situations. Indeed, Scheler thinks that sexual morality is prudish in England and America because it is the least attractive women who enter public affairs and become representative. Among vocational types the least danger of *ressentiment* awaits the soldier, the greatest awaits the priest. Apostasy and romanticism both spring from *ressentiment*. To affirm, treasure, or praise A, not for its own sake,

[1] *Vom Umsturz der Werte*. Leipzig: Der Neue Geist. Second edition, 1919. Vol. I, pp. 315; Vol. II, pp. 344.

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but in order to repudiate, undervalue or blame B—this is the general formula for activity based on *ressentiment*.

How does *ressentiment* throw light on moral judgments? It is obvious, says Scheler, that only false, delusive judgments can rest on *ressentiment*. He believes that there is an absolute order of values, that the laws by which values are graded are as objective as mathematical truths, and that the one class of truths is as little likely to be known by the majority as the other.[1] On the other hand, current moral judgments, he says, merely express the preferences prevalent at any time, and are affected by *ressentiment* to an astonishing degree. Nor does *ressentiment* influence only our everyday life; it is also to be found underlying great historical events. It displays its deepest activity, however, not in hatred of persons or classes, but in false moral judgments, thus leading to what Nietzche called "the falsification of the table of values." Values, like happiness, beauty, and health, are debased; sorrow, evil, and death are exalted in their place. Such is the "sublime revenge" of which Nietzche speaks—sublime because hatred and vengeance disappear and their victim finds release through the objects of envy and hate becoming objects of pity.

Scheler then considers how far *ressentiment* is responsible for (i) Christian morality, and (ii) modern *bourgeois* morality. He believes that Nietzche's description of Christian morality deserves serious discussion. He thinks that Christian morality is not the outcome of *ressentiment*, but that it is fatally easy to give it an interpretation which is. Thus, for example, Christian love is a feeling of the strong for the weak, born of inner serenity and joy in life. It is not attracted by weakness and ugliness, but by the good which exists in spite of them. Its value lies, not in its effectiveness, but in itself. But there is another kind of love, called 'altruism,' and this is a pure product of *ressentiment*. The altruistic person is attracted to the weak because he wants to escape from himself and to disguise his hatred for the strong. Scheler believes that Christian ethics cannot be separated from Christian religion, and that no political or social significance should be sought in Christianity. When, however, we consider modern *bourgeois* morality, it is altogether a different story. Such morality is almost entirely a result of *ressentiment*, and is rightly called a morality of slaves. Scheler conducts his case with great eloquence, and the list of his indictments is long. Modern morality, he says, is founded on a protest, and concludes by glorifying the lowest values because they are the most general; both its beginning and its end exhibit *ressentiment*. Its aims are to abolish and to level—aims which leave out all that is really valuable. That moral value belongs only to what a man gains by his own effort; that all men are morally equal; that values are subjective—these beliefs are products of *ressentiment*, through which the inferior tries to debase the superior to his level. Scheler's final and most crushing indictment is that utilitarian values—cleverness, adaptability, prudence, etc.—have been substituted for ultimate values. An individual, a family, a nation is called on to justify its existence by its usefulness. The possession of intrinsic values, however high, counts for nothing. It is indeed the vocational values of industry and commerce that have gained first place. Modern civilization, he concludes, is a civilization, not of progress, but of decay.

In his essay on "Idols of Self-Knowledge" Scheler wishes to reveal the obstacles which hinder our knowledge of ourselves as Bacon revealed the obstacles which hinder our knowledge of nature. He says that perhaps nothing

[1] This subject is treated in detail in his *Der Formalismus in der Ethik und die materiael Wertethik*, referred to in a previous survey in this *Journal*, Vol. III, No. 9.

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has so much retarded our knowledge of psychical facts as the opinion, widespread among philosophers, that inner perception cannot deceive. As a phenomenologist, Scheler stresses intuition. Correlated with this is the belief that illusion (*Täuschung*) is more important than error (*Irrtum*). Rationalists, he says, in the last resort reduce illusion to error, but intuitive philosophers reverse the procedure. The distinction between illusion and error is treated in detail. To make an error is always to make a false judgment. An illusion, however, is quite independent of judging. It involves a content which is 'given,' as, for example, the appearance of bentness of a straight stick immersed in water. When a straight stick looks bent, the bentness, he says, is undeniably 'given.' But an illusion involves more than this: it involves a plurality of 'spheres' or 'planes' of being. When a straight stick seems bent, the bentness, which belongs to the plane of appearances, is placed in the plane of things. It is *the stick* which looks bent. This misplacing is not a matter of judgment. The stick looks bent even if we judge that it is straight.

Scheler maintains that physical facts cannot be distinguished from psychical facts by any definable quality. He criticizes the Cartesian distinction and those of more modern times, like that of Brentano. The essence of the psychical is intuited in every act of inner perception, the essence of the physical in every act of outer perception. Among the many errors that arise from misguided attempts to reduce one kind of perception to the other are, first, the belief that the physical cannot be 'given,' and, secondly, the analysis of the psychical into visceral and organic sensations. The distinction between a thing or event and its appearances holds for inner as well as for outer perception. Knowledge of a psychical 'thing,' or self, is ultimate just as knowledge of a physical thing is ultimate. And there are illusions of inner as of outer perception. Every psychical experience is accompanied by a physiological change, and these changes are the objects of inner sensation. But these changes are only the appearances of psychical experiences, and it is the experiences which form the subject-matter of psychology. Just as the physiology of the senses is different from physics, so "the physiology of the inner sense" is different from psychology. Common sense, says Scheler, recognizes that there are illusions of inner perception. It distinguishes, for example, between love which is simply not there, and love which is temporarily not felt—between the cessation of love and the realization that one had only supposed oneself in love. The sorrows of a sentimentalist or of an hysterical patient are among the examples of illusion which Scheler gives. These illusions are due to various causes. First, there is the tendency to transfer material facts and material forms of unity to the psychical world. To regard consciousness as a stream is to impose an inappropriate physical form on psychical data and to render many facts, like those of memory, quite inexplicable. A second cause of illusion is that we notice psychical events only in so far as they are signs of bodily states. We overlook the qualitative differences of those which have the same bodily accompaniments. We are born physiological psychologists. Hence 'pure' psychology is neglected, and from this neglect grow up lop-sided theories, like the James-Lange theory of emotion. A third source of illusion is that we tend to perceive only those mental states which may lead to harmful or useful acts. Thus a "well-brought-up" young girl does not perceive her feelings towards a man she cannot marry. Scheler attributes our frequent illusions regarding our motives to this source. A fourth source of illusion is to be found in Freudian 'repression,' a fifth in our awareness of the consequences which follow from our communicating to others what we perceive. Such awareness affects our actual perception of psychical facts as well as our choice of facts to communicate. We tend to overlook experiences for which we have no name, and those

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which are not recognized by our tradition. We find what we are looking for rather than what is really there. Moreover, the experiences of others which we live through often obscure our own and are taken for them. [1]

HUGO BERGMANN'S booklet on *The Controversy Concerning Causation in Recent Physics* [2] is accompanied by a few words from Einstein, who hopes that it will bring physical and philosophical thinking nearer to each other. The subject is well in the forefront of contemporary discussion. Here it is treated with numerous references to the opinions of contemporary scientists. Taking the physical data on authority, Bergmann examines the philosophical implications of certain hypotheses which physicists suggest. He thinks that recent physical discoveries have demolished empiricism. They have made it clear that physical concepts and physical laws are not given in experience. Bergmann, fundamentally a Kantian, believes that science rests on synthetic *a priori* propositions, which are supplied by the mind. But he disagrees with Kant's view that these propositions can be exhaustively formulated. Science, he says, develops, not only by discovering more empirical facts, but also—and more fundamentally—by evolving more *a priori* presuppositions.

The law of causation is regarded by Bergmann as a synthetic *a priori* proposition which science has presupposed in its explanations. Like any other presupposition, it can be given up if it can be shown that the empirical data do not sanction it or that it demands more than is needed to explain them. He regards the law of causation as asserting that every individual event is determined by some other particular event—as asserting more than regular sequence. And he inquires whether the law of statistical regularity, which deals merely with averages, cannot supersede it. The movement among physicists to abandon causation was intensified, he says, when they could apply only the laws of probability to the disintegration of radio-active substances and the changes dealt with by the quantum theory. Some physicists, like Nernst, deny, not the existence of causal laws, but our ability to discover them. Some regard the concept of causation as "empty," and others, like Heisenberg, declare its invalidity established. Bergmann points out that similar views had previously been held by Comte, Nietzche, Poincaré, and Mach, and that, on the other hand, Leibniz, Bolzano, Lotze, and others have argued that the laws of probability entail the law of causation.

Bergmann maintains with much emphasis that to replace causation by probable connection is to replace one *a priori* presupposition by another. The application of statistics to nature rests on an *a priori* presupposition in precisely the same way as does that of the law of causation, but the *a priori* principle is of a less exacting kind. He holds that a world to which statistical laws apply cannot be a chaos; it is not a world of mere chance, for every law is a restricting of chance. The mathematical definition of probability does not ensure its applicability to nature. Such applicability requires a further principle, namely, "that what possesses greater mathematical probability also occurs in a corresponding degree more frequently in nature." This is the postulate which replaces the law of causation and has the advantage of making less assumptions.

Bergmann concludes that the functions of causation can also be performed by probability. These functions are, he says, to determine the temporal positions of events relatively to each other, and to make predictions possible.

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[1] This subject is treated at length in Scheler's *Zur Phänomenologie und Theorie der Sympathiegefühle*. Halle: Niemeyer. 1923.

[2] *Der Kampf um das Kausalgesetz in der jüngsten Physik*. Braunschweig: Vieweg. 1929. Pp. 78.

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Therefore, since probability makes less assumptions, physicists are justified—at any rate at their present stage—in substituting it for causation, and, to quote Reichenbach, in regarding "every step in the march of events as a throw of the dice."

Bergmann does not support the hypothesis of "mutual interaction between past and future," or the hypothesis of final causation. Nor does he think that the substitution of statistical regularity for causation fundamentally affects the question of free will. He maintains, in concluding, that the great significance of the whole controversy has been to make clear the epistemological character of the law of causation. It is a postulate, which may be "empty," that is of no use to science—at least for a time—but which physics can never show to be invalid.

The main question which GEORG STIELER wants to answer in *The Individual and the Mob* [1] is how it is that a human being behaves differently when member of a mob than when alone. He agrees with the general view that mob behaviour is inferior. But he does not think that a mob is composed of any special kind of individuals. The conditions of inferiority are such that any individual may be subjected to them and succumb. Stieler deals in some detail with our knowledge of other people. He agrees with Scheler that, although in apprehending another person's mental state we must also perceive its bodily accompaniments, we do not *infer* the one from the other. He distinguishes between an 'empty' knowledge of another person's experiences—the knowledge that such and such an expression indicates a certain mental state—and an intuitive knowledge. There are, he says, certain kinds of acts in which another person's mental state is experienced as though it were our own. Such experience is given through 'empathy' (*Einfühlung*). Stieler also distinguishes three ways in which the experiences of another form a unity with one's own—one's own reaction to a situation is blended with another's. These are *mitfühlen, nachfühlen, and einsfühlen*. Through such experiences—acts of social consciousness—one can enlarge one's grasp of psychical reactions—understand, for example, the sorrow of a child whose toy is broken. It is because of them that our knowledge of people is fundamentally different from our knowledge of things, and through them that we form the collective subject, the 'we.' A collective entity is not an independent entity as a human being or thing—it is an entity constructed through the perception of individuals.

Stieler draws a distinction between crowd (*Menge*) and mob (*Masse*). A crowd is a gathering of individuals in which all the members have a common purpose—for example, listening to a speaker. A crowd becomes a mob when it behaves badly. A crowd is a potential mob because it is so constituted that, given relatively unimportant external stimuli, it becomes one. Mob behaviour, so Stieler holds, cannot be explained through race, suggestibility, or imitation, while to speak of the "communizing" of certain general character properties, the "sinking" of the heterogeneous into the homogeneous, and so on, is to substitute metaphors for explanation. The real explanation, and this is Stieler's main point, is to be found in the formal characteristics of the crowd, characteristics, that is, which are involved in the nature of a crowd. My behaviour in a mob is dependent on the situation "I in the midst of many human beings, ordered in such and such a manner," and that is why my special characteristics, moral and intellectual, are irrelevant.

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[1] *Person und Masse. Untersuchungen zur Grundlegung einer Massenpsychologie.* Leipzig: Meiner. 1929. Pp. 239.

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To support his argument, Stieler has to describe the formal characteristics which give rise to mob behaviour, he has to analyse what is contained in the situation of an individual as a member of a crowd. This he does very carefully, taking as an example a crowd which is listening to a speaker. He considers in detail the spatial conditions, on which he lays great stress, the awareness of other members, the possibilities of communication, the combined attention to a speaker and the consciousness of other listeners. He concludes, for example, that the excitability of a crowd is an effect partly of the unusual effort which communication with the speaker requires, partly of the feeling of compulsion, experienced both in being compelled to listen and in being hemmed in by the rest of the crowd; that the weakening of responsibility is due to the experience of passivity and to the consciousness of being a subordinate part of a whole, that personality is in abeyance because the individual is 'out of' himself through absorption in the speaker and also through his acts of social consciousness. Conditions such as these constitute a potential mob, and external stimuli, as, for example, the arts of the speaker, though required to transform the crowd into a mob, are relatively unimportant.

Abstraction and Empathy,[1] by WILHELM WORRINGER, though published some years ago, is of considerable interest to-day, especially to readers of Worringer's interesting later book, *Form in Gothic*, recently translated by Herbert Read. Worringer regards a work of art as an objectification of an absolute desire for art (*das absolute Kunstwollen*), a will to create a certain kind of form. The history of art is not the history of different degrees of ability, but of different types of desire. The desire for art is entirely different from the desire to represent natural objects. Some works of art do so as a matter of fact represent them, but this is incidental, though due, as we shall see, to an important fact. Worringer's main theme is to distinguish between two types of desire which express themselves by creating two types of form.

The one type produces the art of empathy, and Worringer gives an account of the theory of empathy as worked out by Lipps. According to this theory æsthetic enjoyment is the enjoyment of our own activity projected into an object. This projection or objectification is what is meant by empathy. Every line is perceived as having some kind of psychological activity contributed by the spectator. If this activity is worked out harmoniously, æsthetic pleasure is experienced; if inharmoniously, the result is displeasure. A form is beautiful if perception of it produces a feeling of freedom, and ugly if perception of it produces restraint. Worringer believes that empathy is involved in the enjoyment of only some works of art, namely, those produced through sympathy with the laws of organic life. This type of æsthetic desire creates forms which express organic harmonies and can be enjoyed only through empathy. Their beauty is due to the vitality with which we endow them. But, says Worringer, we must distinguish between the art of empathy and the art of abstraction. There are works of art whose value lies in their detachment from life. They express, not organic, but geometrical, material harmonies. They are produced through the desire to abstract, which is a desire to suppress the vital and to create the changeless and necessary. Appreciation of such works, so far from involving empathy, is directly opposed to it. Thus on the one hand Greek statues and Renaissance paintings can be appreciated only through empathy, while the austerity of the Pyramids and of Byzantine mosaics can be appreciated only through suppressing it.

Worringer believes that each type of æsthetic desire is the outcome of

[1] *Abstraktion und Einfühlung. Ein Beitrag zur Stilpsychologie.* München: R. Piper. Seventh edition. 1919. Pp. 129.

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definite psychological conditions. People, like the Greeks, who feel themselves in harmony with the external world, desire to produce works of art in which they can enjoy vital experiences. On the other hand, those who regard the external world as hostile, desire to abstract from the conditions of life. The art of primitive peoples, who are afraid because they are ignorant, is abstract. But so too is the art of many highly cultured oriental peoples whose deeper understanding has made them dissatisfied with the world of appearances. In each case the abstract character of the art is desired. It is not the result of a failure to imitate.

It is important, says Worringer, to distinguish the two types of desire, but it should also be recognized that they are both forms of a more fundamental desire—the desire to get out of oneself. In empathy, it is true, the spectator enjoys his own activity, but in projecting it into an object he abstracts it from himself. He is freed, as Lipps puts it, from everything external to the observation of form; he is simply the ideal, the observing self. In abstraction the self-renunciation is much greater and more profound. It is not simply an urge to be freed from one's individuality, but an urge to be freed from humanity and life itself in contemplation of the unchangeable and necessary.

The two types of desire create respectively naturalism and style. Naturalism is not imitation, but it is an approximation to the organic and life-like arising from the desire to create the kind of beauty which empathy reveals. A naturalistic work of art superficially resembles the product of a desire to imitate, but the difference is obvious to anyone with artistic sensibility. The word "style" is used, in an unusual sense, for all those characteristics in a work of art which are due to the desire for abstraction. Worringer gives a brief account of these characteristics. The desire to abstract leads not only to the creation of purely unrepresentative forms, but also to the geometrizing and stabilizing of natural objects. Hence it evolves certain methods of presentation—concentration on flatness as distinct from depth avoidance of impressionistic interest in optical appearances, preference for straight lines, and so on.

In the second half of the book the theory is briefly illustrated by the art of different peoples. One chapter is devoted to ornament, which Worringer regards as the purest evidence of the type to which a people's desire for art belongs, another to architecture and sculpture, and the last to northern pre-Renaissance art, which is the subject of maturer study in his *Form in Gothic*. In an appendix he energetically maintains that æsthetics is on the wrong lines if it takes the specific merits of classical art to be criteria for the merits of any art—a warning of which to-day popular taste rather than æsthetics is in need. A western investigator, he says, has no difficulty in understanding classical art, for he shares the desire which created it. But only imagination can enable him to understand other types of art, and the exercise of such imagination is fundamental to the progress of æsthetics.

HELEN KNIGHT.

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NEW BOOKS

Point Counterpoint. By ALDOUS HUXLEY. (London: Chatto & Windus. 1928. Pp. 600. Price 10s. 6d. net.)
Proper Studies. By ALDOUS HUXLEY. (London: Chatto & Windus. 1927. Pp. xix + 299. Price 7s. 6d. net.)

Those who judge Mr. Aldous Huxley as a thinker only by his earlier novels may wonder why his views on theology should be thought to require critical examination, and suspect the critic of setting out "to break a butterfly upon the wheel." But anyone who follows literary fashions cannot have failed to observe that Mr. Huxley is beginning to regard himself as something more than an entertaining novelist, and, what is more important, to be accepted in his new rôle by a large circle of readers. He is, in fact, one of the major prophets of the new generation. His later novels, though still full enough of literary entertainment, have an increasingly large quantity of instruction mixed with the entertainment, and the latest of them, *Point Counterpoint*, is in its essence something like a consistent statement of his present outlook on life. Still more serious are his volumes of essays; and it is in the last of these, *Proper Studies*, that he puts forward the views with which I am here concerned. They are important views on a most important subject, put, it goes without saying, with a rare persuasiveness of language; and I feel that they should be given the critical attention that they deserve. If they are right, they are more than remarkable; and if they are wrong, they are likely to mislead many, if not corrected in good time.

The essential part of them is contained in the essay called "A Note on Dogma," which is itself a criticism of the views on religion recently advanced by Professor Whitehead. The professor has said that "The dogmas of religion are attempts to formulate in precise terms the truths disclosed in the religious experience of mankind," that "reason is the safeguard of the objectivity of religion," and that, when rationalized, religious experience is found to be an apprehension of a "rightness in things." To this Mr. Huxley objects that reason is not a safeguard of objectivity. In science, he points out, the safeguard of objectivity is not reason, but sense-perception; and he instances Hegel's fantastic *Philosophy of Nature* to show that "scientific theories which are not functions of sense-perceptions are generally nonsensical." But how, he asks, can we treat a religious in the same way as a scientific theory? "The theologian objects to admitting that his theory is a function of his moments of religious intuition, for the good reason that his intuitions are different at different moments, and that the intuitions of all men are by no means identical"; and Mr. Huxley proceeds to show, by many effective arguments and examples, the variety, changeableness, and, in every sense of the word, unreliability of religious intuitions. So far, so good. But, just when one would suppose him ready to eliminate at least the more obviously unreliable of these intuitions, he proceeds to treat them all as valid, and finally demands that theology shall be sufficiently self-contradictory to account for them all as perceptions of objective reality.

"My only objection to Catholic theology is, not that it is absurd, but that it is not absurd enough. It is realistic up to a point—much more

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realistic than many of the self-styled modern and scientific philosophies which have risen in its place—but it has not dared to be realistic to the end. The truth is paradoxical; but man's passion for rational coherence is even stronger than his love of truth. The theologians have perceived that the feelings and spiritual perceptions of men are irreducibly different among themselves. They have rationalized some of these intuitions in the form of paradoxical dogmas. But they have shrunk from rationalizing all the intuitions, from making their doctrines not merely absurd, but extravagantly absurd. They were driven prematurely into unparadoxical consistency by their belief that one of the intuitions to be rationalized was not a human intuition, but a perception by a divine being of absolute truth. The remarkable thing is that, having this belief, the theologians went as far along the road of paradox as they did. Those who do not share their belief find it unnecessary to stop where they stopped, or to impose any arbitrary limit to the number of irreducible intuitions admissible for rationalization." And elsewhere he says: "A religious theory, if it is to be universally valid, must cover all the facts."

But what are facts, and what are fancies? Among the first facts to be covered, at any rate, are the facts of ordinary experience; that is, sense-perceptions and the logical deductions drawn from them; and though I would not presume to say that the checking of intuitions by reference to those facts is necessarily what Professor Whitehead means by "the rationalization of religious intuitions," that is in practice the form of rationalization which he and other philosophers apply to religious dogmas. No doubt, if Mr. Huxley is consistent in his cry for paradox and absurdity, he will reply that logic itself has no validity; but apparently he shrinks from that, as well he may, for in another essay he admits that the laws of thought are universal, while maintaining that they cannot be applied in practice in the most important matters of life because of the diversity of the premisses held by different types of people. Now one of the chief laws of thought is, of course, that nothing can both be and not be; so that, if we find a religious intuition leading us to some assertion in direct contradiction to the results of reasoning on our sense-perceptions, we must either throw logic overboard altogether—in which case it seems hardly worth while for Mr. Huxley to have written this or any other essay in which logic is used to persuade his readers of the truth of his conclusions—or consider, by the use of logic, whether the credentials of the intuition, its claims to represent a genuine objective reality, are good enough to compel us to prefer it to our ordinary experience; for obviously, in view of what Mr. Huxley has already admitted about them, the onus of proof lies on the intuitions. This is not a question of incompatible premisses, but applies to reasoning from any premiss whatsoever, except the premiss that reasoning itself is not valid.

Mr. Huxley, however, apparently thinks it impossible to examine these credentials with any impartiality. For he says: "Does the religious (and with it the artistic) intuition apprehend an objective reality outside the private psychological universe of the person who feels the intuition? . . . Your answer depends upon the intensity of your intuitions. For those in whom they are very strong the reality of the objects they apprehend seems too obvious to be discussed. Those in whom they are weak naturally tend to doubt the existence o fsomething about which they have no information." Of this passage I can only repeat what he himself says elsewhere of Professor Whitehead's statements: "These statements are clear—so clear that their falsity is immediately manifest." Bishop Berkeley, for instance, did not

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disbelieve in the reality of the objects perceived by his senses because those senses were any weaker than in other people, but because he had convinced himself, by the use of his reason, that their perceptions were merely subjective. He had reasoned erroneously, in the opinion of most subsequent philosophers; but that does not alter the fact that he and the other subjective idealists arrived at their conclusions by reason, aided, it may be, by prejudice, but at any rate not by incapacity to experience the feeling of the reality of the outside world which the exercise of his sense-perceptions normally brings to every man. Dr. McTaggart, the Hegelian, says in one of his essays that the feeling of reality in his surroundings was at times so strong for him that he had to exercise all his philosophy to convince himself that things were not, after all, what they seemed. And, to take the converse case, Mr. Huxley has himself declared that he has no intense religious intuition of his own; yet he appears to assume the objective reality of even the most extreme mystic experiences, presumably because he thinks this a more reasonable explanation than the purely subjective explanation given by psychologists like Dr. Leuba, whose work he has apparently read but not agreed with. Elsewhere, indeed, he appears to admit that the intensity of an experience is no guarantee of its connection with objective reality; but he seems to have no other standard by which to judge it. "Why," he asks, "should the rationalization of one mood be more objective than the rationalization (which may be equally logical) of another? What reason have we for supposing that Browning's optimistic 'God's in His Heaven, all's right with the world' is superior as objective truth to Hardy's assertion that the heaven is empty, or, if tenanted, entirely careless of the world? The answer is, that we have no reason, only our intuition. Each person will choose the rationalization which suits his prevailing or his passing mood." If Mr. Huxley's views about the universe are merely the "rationalization" of his moods, it is no wonder that he has a low opinion of philosophy! Most people, however, try, however difficult it may be, to leave their moods out of the question, and to discover, by the use of reason, the view most compatible with the facts of ordinary experience, that is, with what is actually happening in the world around them. For myself, I find Hardy's view more compatible with those facts than Browning's, though not entirely so; but I have no intuition on the matter, one way or the other. I have arrived at this conclusion entirely by the use of my reason, such as it is, and if I could be given good reasons for changing my opinion, I would not hesitate to change it, despite anyone's intuition to the contrary, unless such an intuition were so definite and so universal as to be more than equivalent to a sense-perception, which in this particular case it obviously is not. Even Mr. Huxley can hardly maintain that the facts of ordinary experience give no guidance at all in these matters.

It has, of course, been held by some extreme subjectivists that these facts are only illusory sense-perceptions with no relation to ultimate reality, and can consequently be ignored when considering the validity of any intuitive view of the world. But I do not gather that Mr. Huxley holds this view, which has been shown often enough to be most improbable, to say the least of it. Moreover, in the case just discussed, its adoption would not remove the difficulty. For a thoroughly optimistic view of the world is confronted by the existence of evil, which is not dependent upon the validity of any sense-perceptions; and it has often been pointed out by critics of Hegelianism that, even if our perception of evil is purely subjective, the fact that it is inescapably present to us is incompatible with the doctrine of the completely good Absolute, or, as Mr. Joad has put it in his *Mind and Matter*, with the same doctrine in its theological form of divine goodness and omnipotence. It is not

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merely the metaphysicians who see the implications of this conclusion. At a recent Congress of Modern Churchmen, a speaker declared that "omnipotence was a meaningless word." Yet Mr. Huxley would apparently reintroduce that meaningless word into his theology merely because a number of people have had an intuition that God is omnipotent. Will he also reintroduce the personal Devil, about whom an equally strong intuition has been experienced by so many authorities, from Luther downwards?

The fact is, of course, that, as Mr. Huxley's own grandfather observed long ago, no one has ever been able to explain why we should not use reason on the problems of religion in the same manner as we use it on any other problems; and, if we do, theology for us must either be rational or cease to exist. The mere collection of incompatible intuitions is not theology, is not, indeed, anything at all beyond a series of statements that certain people have, or have had, certain intuitions. Theology begins when we attempt to assess the value of those intuitions; and in that, as in any other assessment, the only safe assessor is reason. If Mr. Huxley retorts that theology has never yet been really rational, I reply that I have not such a low opinion of its exponents as to assume that, if some philosopher could construct a logically watertight view of the universe, it would not in the end find general acceptance amongst them, in spite of any intuitions to the contrary. That no one system has yet been accepted is due, not to the coexistence of a number of equally watertight systems, but to the opposite fact that, as every metaphysician knows, there is not one of them against which serious logical objections cannot be brought. Mr. Huxley, in a previous essay, makes great play with the psychological distinction between "introverts" and "extroverts," maintaining that this is the cause of the disputes between philosophical systems, and that the one type can never convince the other. Faced with the awkward fact that an "introvert" view of the world has been replaced by an "extrovert" view since the days of Galileo, though the proportion of the two types has presumably remained constant, he endeavours to explain it by saying that the latter view is accepted "mainly on pragmatic grounds, because it enables us to control natural forces." Now, whatever may be the case to-day, at the time when the change took place it was certainly not foreseen that the new idea of the world would "enable us to control natural forces." It was accepted because it seemed, rightly or wrongly, to be reasonable, reason being, after all, common to both "introverts" and "extroverts."

There is, I suspect, something of that desire to *épater le bourgeois*, which makes his novels such entertaining reading, in this attempt of Mr. Huxley's to "make our flesh creep" by maintaining that it is impossible to convince anyone that his world-view or his intuition is not objectively true, and that the number and variety of intuitions is so great that a rational philosophy or theology is impossible; an author so active in the use of his reason on other subjects is not likely to be really content with such an irrational position. But there is also, it would seem, something of an excessive eclecticism in his thought—a desire, in this case, to give the mystics and other irrationalists even more than their due. Mysticism is at present a fashionable subject, which has produced a large and dogmatic literature, very intimidating to a non-mystic with a desire to appreciate all sides of a question, and a natural tendency to assume that there must be some flame in so much smoke. The lengths to which the claims of mysticism are pushed have to be read to be believed. In some milieux belief in the verbal inspiration of William Blake seems to have taken the place formerly held by belief in the verbal inspiration of the Bible; the gentleman who wrote the Blake centenary article in *The Times* has even suggested that the "Prophetic Books" are the product of a

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genuine prophetic vision; and the general attitude of the whole school is that any attempt to discuss critically the credentials of mystic experience implies, *ipso facto*, the mental or spiritual inferiority of the critic. It needs a tough-minded philosopher to resist the inferiority complex thus created, and in these matters Mr. Huxley is far from tough-minded. He had an Arnold as well as a Huxley grandfather, and it was of Matthew Arnold, his family and friends that the satirist sang:—

"We've got no faith; we don't know what to do.
"To think one can't believe a thing because it isn't true!"

Mr. Huxley seems often to wish wistfully for the power to believe something that isn't true. He quotes with approval Tertullian's apocryphal *Credo quia impossibile*, and in one of his earlier essays, in a reference to Faraday's fantastic "Sandemanian" theology, he maintains, in opposition to those who are surprised that Faraday should have found his creed compatible with his science, that any creed is as compatible with science as any other—Clerk Maxwell's orthodox Christian mysticism as much as his own grandfather's agnosticism. It is all, he says, a matter of "upbringing and temperament." On this theory we may yet expect a reconciliation between science and West African Voodoo!

But to one who is not prepared to take the claims of mysticism on trust, their critical examination leads to the discovery of certain facts which are, to say the least, very curious. For example: the close resemblance between the "genuine experiences" and cases universally recognized as purely pathological and subjective, a resemblance so close that trained psychologists can discover no difference in the mental processes involved, and mystics themselves are compelled to say, with Omar Khayyam: "A hair, perhaps, divides the false from true"; the connection of the experiences with ill-health and physical abnormality—a character in Mr. Huxley's own latest novel says mockingly: "Sick men are very spiritual"; and, most curious of all, the different and even mutually exclusive "realities" experienced by different mystics. Many of the experiences, no doubt, have something in common; but the mutually exclusive parts of them are as intensely experienced as the resemblances. There is no "lowest common denominator" of mysticism, not even that "feeling of the world as a limited whole," which Mr. Huxley declares, in the already mentioned essay on Faraday, to be its essence; for dualism and pluralism too have had their mystics. A Catholic mystic, for example, is mystically convinced that Catholicism is not merely one aspect of truth, but *exclusive* truth; and his conviction of its exclusiveness is as intense as any other part of his experience. Yet that conviction must be purely subjective, even on Mr. Huxley's paradox hypothesis, if room is to be found in our theology for, say, Hindu or Buddhist mysticism. Take, for instance, the Catholic conviction that sacraments are necessary to salvation. It is a conviction that they are necessary, not for some men, but for all men, and there is no way of reconciling it, either in theory or in practice, with the opposite conviction that they are not necessary. If Mr. Huxley, as I surmise, does not think sacraments necessary to salvation, he must come down off his fence and say outright that this part of Catholic theology is definitely false, however many mystics have been convinced of its truth. Mr. Bertrand Russell pointed this out long ago, in his criticism of pragmatism, from which, indeed, Mr. Huxley's theory is apparently derived, the difference being that pragmatism asserts that there are different "truths" for different people, which is equivalent to saying that there is no truth, since the definition of truth is that it is the same for all, while Mr. Huxley asserts that truth is really the same, but presents a number of different aspects, which can only be reconciled by paradox. In

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either case Mr. Russell's objection holds. Pragmatism, he observed, was put forward as a means of satisfying the claims of religious conviction in all its divergent forms; but it cannot satisfy them, since a vital part of religious conviction is the sense of its absolute and exclusive truth. Christian apologists soon reached the same conclusion, and after a few attempts to utilize pragmatism they seem now to have generally abandoned the use of such a double-edged weapon.

We are thus forced to the conclusion that some part at least of mystical experience is purely subjective, and, if this is once admitted, there is a strong case, based on the considerations already enumerated, for regarding the rest of it also as a subjective emotional exaggeration of the simpler forms of religious, or rather moral, feeling; in fact, as being, in the well-known phrase, "morality tinged with emotion." There is no reason why "Occam's razor" should not cut as sharply here as elsewhere. *Entia non sint multiplicanda præter necessitatem*, and if a subjective cause must be presumed for many of the experiences, while the evidence is also compatible with the same explanation of the others, why assume an objective cause for any? The same applies *a fortiori* to the less intense forms of "intuition," which usually prove, on analysis, to be nothing more than objectivized emotions.

Mr. Huxley, however, has an inveterate habit of confusing an emotion with a perception. In his latest novel, *Point Counterpoint*, he invites his readers to have a hearty laugh at old Lord Gattenden, who thought he could prove the existence of God by an algebraical formula; yet in the same novel they are apparently invited to take quite seriously the egregious Mr. Spandrell, who attempts a similar proof by listening to a piece of music on the gramophone! Knowledge by perception is *sui generis*, as Professor Cook-Wilson used to say. It involves processes different from those of the emotions, and deductions based upon it cannot logically be transferred to any other form of experience. Nearly twenty years ago I read an essay by that eminent divine, Dr. Illingworth, in the course of which he warned his fellow divines that they would involve themselves in insuperable difficulties if they treated religious experiences as the equivalent of sense-perceptions. Yet Mr. Huxley rushes in where the divine fears to tread. For myself, I should much like to know how Mr. Spandrell, who is represented as intelligent though depraved, came to suppose that the emotion produced in him by the music could possibly prove anything but its own existence.

If, then, we may rule out as subjective all those so-called intuitions which are contrary to reason, to ordinary experience, or to our moral sense (such as those, common enough in primitive religion, and far from unknown even now, which associate religion with fear rather than love), what have we left? Something very like Professor Whitehead's "apprehension of a rightness in things," or rather, as I think, "a rightness in ourselves." It seems clear to me, as it did to Mr. Huxley's grandfather, that there is a profound disharmony between our own moral sense and the other processes of the universe, and that, as he said in *Evolution and Ethics*, "ethical progress depends, not on imitating the cosmic process, still less in running away from it, but in combating it." Yet the universe is of such a nature that moral values are apparent to man, and moral obligation binding upon him. This seems the only intuition of which we can be reasonably certain; but it is surely enough for our purposes. It "fits the facts," and provides the foundations, at least, for a rational "theology," in the sense of a view of the world in relation to the problems of human conduct. There is thus no need for Mr. Huxley to torment himself, or his readers, with paradoxes. His thought is always stimulating; but on this subject I invite him, with all respect, to think again.

LAURENCE COLLIER.

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The Greek Atomists and Epicurus: a Study. By CYRIL BAILEY, M.A., Jowett Fellow and Tutor of Balliol College. (Oxford: Clarendon Press. 1928. Pp. ix + 619. Price 24s. net.)

The Atomists are the Cinderellas of the Greek philosophical tradition. In their own day, it seems, they were heretics, and they have been that, or something worse, ever since. Most of their writings were allowed to perish, and our knowledge of them would be slight indeed but for two strokes of luck which fell late in the day to the School of Epicurus; first in finding a great Roman poet to preach its doctrine, and secondly in furnishing an editor to the compilation which we know as Diogenes Laertius's *Lives of the Philosophers*. In the mediæval world they were practically unknown. Early in the modern era they found a single man of genius, Gassendi, to expound their heresies; but he lived before the days of history, and had but a transient influence on the thought of his time. In the eighteenth century Epicurus was frequently cited by moralists, in conjunction with Machiavelli, Hobbes, Rochefoucauld, and Mandeville, as a specimen of moral scepticism, but his atomic theories were not seriously studied. Later, the sensational discovery at Herculaneum of masses of first-century papyri, which turned out to belong almost without exception to the Epicurean School, seemed to offer a great opportunity to a more historically minded age; but the condition of the papyri was deplorable and their contents turned out disappointing. Herculaneum has, by slow and painful degrees, contributed a good deal to our knowledge of the Epicurean School, but it has added little to our knowledge of its physical doctrines. As a result of all this, while a good deal has been written about Greek atomism from a number of different angles, a comprehensive survey of the work of Leucippus, Democritus, and Epicurus hardly exists. In his own country, certainly, Mr. Bailey may plead the disabilities and claim the privileges of a pioneer; and it would be hard to find a recent work in any modern language which covers the same ground with anything like the same thoroughness.

After an introductory section describing the historical situation in which atomism arose, with more particular reference to Empedocles and Anaxagoras, Mr. Bailey gives successive accounts on parallel lines of the three atomists, Leucippus, Democritus, and Epicurus. In each case (apart from the exception noted below) the physical principles are treated first and in most detail; psychology, theology, and ethics come last, and in regard to these Mr. Bailey is largely (though not exclusively) occupied with their relation to the physical theories. He is anxious to exhibit, if he can, a consistent theory covering the whole ground of philosophy and resting on the basis of atomism. It is chiefly on this account, by reason of its superior simplicity and consistency, that he claims for the Epicurean system important advantages over its predecessors, and for Epicurus the status of a 'great thinker.' The proportions of his account are inevitably determined to a large extent by the material available; and in allotting about twice as much space to Epicurus as to the other two together, he rightly risks error on the side of generosity to the earlier writers. The book ends with some valuable appendices, all of which, except one (on Anaxagoras), are concerned with points of Epicurean doctrine. One of these (on *ἐπιβολὴ τῆς διανοίας*) is reprinted from Mr. Bailey's recent edition of the Letters and other remains of Epicurus.

There is a common view of Epicurus—a 'negligent tradition,' Mr. Bailey calls it—as of one wholly preoccupied with the problem of conduct, who found himself forced to seek support from without for his solution of that problem, and so came, by accident as it were, to invade the fields of physics and epistemology. This view springs, of course, from an exaggeration of

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certain elements in Epicurus's own statement of his views. It would claim support, for instance, from the sceptical temper of the Second Letter, in which a number of alternative explanations are presented of *meteora* without any attempt to decide between them. It would suggest that Epicurus was not in earnest with atomism, but that, wishing to dispel men's fears and make happiness possible, he snatched up the tools forged by Democritus as handy weapons for his purpose; that he was not interested in these problems for their own sake, but only so far as to show that a simple naturalistic theory was available which was perfectly capable of solving them. Mr. Bailey is in strong but discriminating opposition to this view of Epicurus. He does not, of course, deny that peace of mind (*ἀταραξία*) was Epicurus's chief concern and the end he put before his school. On the formal side, therefore, the subordination of all intellectual activity to this as end is complete and admitted. But it does not follow that the ethical doctrine is either logically or historically the basis of the rest, nor that Epicurus was not seriously interested in his 'physiology' and his theory of knowledge. With regard to the atomic doctrine, it is pretty certain that this was the main interest of Leucippus and Democritus. Mr. Bailey does not go so far as to suggest that its place was equally fundamental for Epicurus. He does, however, show with great care and in considerable detail how thoroughly Epicurus recast the inherited doctrine, and draws the legitimate inference that atomism was not for Epicurus a mere means, but something that was of interest for itself and into which he was prepared to put his best thought. Admitting the formal subordination to ethics, and asserting a real interest in the physical theory, Mr. Bailey finds the real root of Epicurus's system in his sensationalist theory of knowledge. The accounts of the three atomists are written, as we have said, on parallel lines; but there is this significant difference that in the case of Epicurus Mr. Bailey finds it necessary to put the theory of knowledge first.[1] It is first and foremost as a consistent sensationalism that he asks us to recognize Epicureanism as a considerable philosophical achievement. "Epicurean physics and ethics," says Mr. Bailey, are "but the elaboration in many different fields of the supreme principle of the infallibility of sensation."

Probably the most valuable feature of Mr. Bailey's exposition is the prominence which he has given to this doctrine and to certain difficulties connected with it. The very able and valuable appendix on *ἐπιβολὴ τῆς διανοίας* shows how stiff some of the hedges are; and in the two vital chapters (c. ii, 'Canonice' and c. viii, 'The Soul') the attentive reader will observe that Mr. Bailey is often hard put to it to maintain a single view of the fundamental certainty itself. 'The supreme principle of the infallibility of sensation' is to be qualified first by the proviso that the image must be 'clear' (*ἐναργής*), which is normally possible only if the object is close at hand; at least, it is only such images that are of 'true' or 'scientific value' (p. 243). Further, it must be brought under a general concept or 'anticipation' (*πρόληψις*), which is itself a resultant of previous sensations. Further, there are certain very fine emanations from bodies, which pass through the sense-organs and strike the mind direct: in such wise is man made aware of the gods—'the perception is made immediately by the mind without the intervention of the senses'

[1] We should like to enter a protest against the word 'Canonice' which stands as the chapter heading here. How is the English reader to know how to pronounce this word? Two German universities have allowed theses to go out under the title *De Epicuri Canonica*, which is at least better by the letter *a* for *e*. Usener has a section headed 'Canonica,' but this is neuter plural (see footnote, *Epicurea*, p. 177). It is true that Diogenes gives the Epicurean division of philosophy (x, 29) as *κανονικόν, φυσικόν, ἠθικόν*, but the form *κανονικὴ* does not seem to occur, and actually, as Diogenes tells us in the same passage, the theory of the *κανών* was considered to be a part of 'physiology.'

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(p. 251). Then there is the general difficulty created by the fact that in the order of existence the primary certainties are atoms and the void, neither of which are directly guaranteed by the senses at all. In regard to *meteora*, as I have said, Epicurus allows of a variety of possible explanations, but for the fundamental physical conceptions he claims absolute certainty: they represent the sole theory consistent with the observations. It is something of a shock to find Mr. Bailey driven by way of explanation to the view that the formation of a 'scientific concept' is for Epicurus 'the immediate intuition of a self-evident proposition' (p. 428). "The whole of scientific thought," he says, "is . . . a chain of such self-evident or 'clear' concepts, grasped by the act of 'mental apprehension' each in their due order" (p. 429).

Mr. Bailey tries to bring this doctrine of 'mental apprehension'—his version of *ἐπιβολὴ τῆς διανοίας*—into line with sensationalism in two ways: first, by reducing thought itself to a kind of sensation. The two processes, he explains, "were in no way different in kind: thought, like sensation, is a 'movement' of soul-atoms, situated in the mind, not in the sense-centres: . . . its most remote speculations are only in reality the result of such movement combining the images of concepts, built up ultimately out of sensations into a new image. In short, the mental processes are nothing but a subtler reproduction of the processes of sensation" (p. 263). But this does not seem to help. If thought operates as a sixth sense, as in the case of the Gods, then it has independent access to reality; if it merely reproduces the five senses, then it has not. If it yields self-evident propositions, then it does not resemble the senses, for they, without the assistance of thought, yield no propositions at all (p. 254). Secondly, Mr. Bailey tries to link the immediate intuition of the self-evident with sensation by means of its content or material. But in his account of the sensuous derivation we find what seems to us a hesitation between two views (both views are suggested by different parts of the statement just quoted from p. 263). On one view the work of thought is the automatic and inevitable resultant of sensation: no effort of thinking is required and all test by argument is presumably excluded. On the other view thought is an active and conscious effort to extend assertion beyond the observed by analogy or some similar process. These two views are not separately presented in Mr. Bailey's account, because neither of them will give him what he wants. His 'mental apprehension' has to be infallible, which argument by analogy is not; and it has to give him atoms and void, which sensation will not give him. But in the end he really confronts as with something, under the name of 'mental apprehension,' which resembles more than anything else the 'intuition of the mind' with which Descartes claimed to apprehend his famous piece of wax.

The sensationalist doctrine, then, which is the keystone of Epicureanism, is not perfectly clear and free from difficulties. Some of these are certainly difficulties common to all sensationalism, from which there are fairly well-trodden ways of escape or evasion; others are peculiar to Epicureanism. Confusing all the issues is the difficulty of exposition, complicated by gaps in our information, the defective condition of the texts, and the obscurity of Epicurus's Greek. Mr. Bailey has done a great deal to help us out of the latter difficulties, less in regard to the former. Our main criticism of his two volumes as a work of exposition is that they despair unduly of Herculaneum. We admit that Mr. Bailey is in good company when he speaks of the later Epicureans' "illicit tendency to develop a logic of Epicureanism" (p. 259); by this phrase he excuses himself from taking into account Philodemus's tract on *Signs and Signification*. But there is no evidence whatever that the doctrines of this tract depart in any particular from the teachings of Epicurus; and it

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seems to us sheer folly to try to define the founder's attitude to science without taking account of the interpretation of that attitude offered by Zeno, who had all the texts before him and was one of the ablest of Epicurus's successors. A less signal, but still remarkable, instance of this refusal to consider the evidence of Herculaneum, is the absence of any reference to the important fragment of the περὶ φύσεως of Epicurus discussing the freedom of the will, which was published by Gomperz in *Wiener Studien*, nearly fifty years ago (1881). We admit that this fragment is difficult to understand; but Gomperz thought he understood it, and claimed that it threw a new light on this important article of the Epicurean faith. What is surprising is that Mr. Bailey should not even inform the student who reads his book that the document exists.

The upshot, then, is this. We may well congratulate Mr. Bailey on his achievement and thank him for it. As philosophers especially should we be grateful to him for making the atomic doctrine in its full range immensely more accessible than it ever has been before. But like most good work in such subjects the achievement is a call to a further advance. Fuller information and fuller understanding are well within reach, and Mr. Bailey by his clear and thorough survey of the ground contributes materially to their attainment.

J. L. Stocks.

A Modern Theory of Ethics. By W. Olaf Stapledon, M.A., Ph.D. (London: Methuen & Co. 1929. Pp. ix + 277. Price 8s. 6d.)

Mr. Stapledon does not allow the age-long controversy over the nature of the good to induce in him that degree of disillusionment implied in one of Hume's remarks in another connection that "the frequent disputes prove not the reality of the idea upon which the dispute turns." He believes that "good" does mean something, and that the need for ethics is still great. But he refuses to keep ethics in dignified and unsullied isolation. By linking it up with psychology and biology he would, like the scientists of nutrition, reinstate the vital factors which have been removed under erroneous ideas of refinement and purity.

His view is suggested by what he takes to be our intuitive experience of moral obligation as objective and by a psychological theory in which conscious conation presupposes teleological tendencies objective to the act of conation (96). Ethics must rest on a realist basis. Consciousness is not an essential factor in the nature of the good. The experient plays no fundamental rôle in the conception of the good. "Ethics seems to suffer from an obsession with selfhood" (44). Hence the good as the good will, the good formulated in terms of conation, the good as fulfilment of conscious desire or feeling, the good as self-realization, are all to be rejected. What is important is not *consciousness*, but *that of which* there is consciousness. There are situations, activities, objects that have a real nature, a certain structure and certain needs whether there be consciousness of them or not. It is in this *real* that goodness must be grounded, and from such goodness obligation must be derived.

The idea which is psychologically primary and which is important for ethics is that of "need," "objective tendency," "teleological activity." Teleology does not require to be defined as something conscious. "Need is something rooted in the nature of the objective field which we cognize" (77). Good is the fulfilment of a need or of teleological activity, whether or not

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consciousness plays a part in the activity or accompanies the fulfilment (81). The meaning of obligation is that "the universe is such that, when we take into account all that we know of *its* nature, there is seen to be a dominant need whose fulfilment demands these activities on the part of a man. And when we say that this need has a "claim" on each of us, we mean, reasonably or unreasonably, that goodness must be universally grounded; and that in the universal view the fulfilment of this supreme need appears as the intrinsically best end" (174). The Ideal in an ultimate sense is the fulfilment of the needs, capacities, or objective tendencies of the universe. It is because the universe has such a need of fulfilment that the human being has such an experience as that of obligation.

That is the main conception which is worked out in a series of chapters, ending in a discussion upon the significance of admiration and ecstasy. This discussion need not be allowed to obscure the main issue, and its points are expressed very modestly and tentatively. Mr. Stapledon finds himself in closest sympathy with Professor G. E. Moore and Professor Field, and in greatest opposition to Professor Hobhouse, and especially Bradley. Yet if some of Mr. Stapledon's philosophical ideas, such as the idea of the *real* knowing itself and willing fulfilment (225), of mentality as the realization of the real's deepest need (214), of the status of mind generally (209–210, 214), of the practical ideal as self-fulfilment (224), of the organic and its significance (213, 229, 237): if such ideas, apart from the difficulty of reconciling the status of mentality with the instrumental view of consciousness, were examined, they would probably be found not to diverge very far from Bradley's theory when the metaphysical and *real* significance which Bradley attaches to the Self and the Ideal is kept in mind. Might they not lead logically after all to the view that the highest ideal is the realization of real needs in *conscious* form?

To secure objectivity in ethics is very necessary; and it is, in the light of modern psychology and biology, along the lines of a theory like that of Mr. Stapledon's that such a result will be achieved. But there are two dangers. The objectivity that is sought and found may obscure the significance of the ethical life. This is what one feels about Bradley's theory, and it strikes one also in Mr. Stapledon's. The real overshadows human beings in both cases. What requires to be emphasized is that the ethical life is the realization, not of the needs of the universe, but of the needs of human beings in accordance with the capacities of the universe. Even if to know and will the universe is a profound need of the universe, yet it becomes an ethical obligation only in so far it is a need of human beings. The second danger lies in the fact that the mediating factor between the ethical life and needs is cognition. There is no guarantee that the needs will be truly cognized. Yet erroneous beliefs about human needs and about the universe have led and do lead to the elaboration of moral systems. Morality and society will therefore have to be viewed as something that is continually in the process of being "made"; and the validity of the morality must be continually tested by reference to the true character of the real revealed in human knowledge. But once this is admitted, the nature of evil, the problem of choice, and the question of the compatibility and sacrifice of needs, will have to be considered also in reference to the fact of knowledge or ignorance. It is not to the universe but to man's ignorance and the consequences he has himself brought about by his ignorance that we ought to attribute the intricacies and the perplexities of choice and the need of sacrifice.

B. M. Laing.

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Making the Fascist State. By H. W. SCHNEIDER. (London: Oxford University Press. 1928. Pp. xi + 392. Price 21s.)

Political thinkers of to-day are less apt to regard the processes of history in purely abstract terms of forces and movements than was the case a generation ago. The 'great man' has come into his own again, a more modest rôle, it is true, than Carlyle assigned him, yet of considerable importance. One of the chief interests in Mr. Schneider's important work is its treatment of the relations between 'the great man' and the influences and events which form his opportunity. For the first time Fascism as an achieved system is made intelligible to the non-Latin mind. Mr. Schneider shows us the indomitable will of Mussolini, 'sensing' situations and manipulating events with an almost uncanny skill, in the course of a *sacro egoismo* which identifies him with the glory of his country.

Disillusionment with democratic institutions has not been peculiar to Italy, but the feebleness and sense of failure were there more evident. Liberalism had always been confined to a small bourgeois group, and working-class town politics ran too easily towards anarchism. Post-war economic distresses and political confusions gave the opportunity to a self-appointed *élite* to impose its will and to gather under its banner the hopes and enthusiasms of Italian patriots.

Mr. Schneider finds three chief sources of the anti-democratic theory on which Fascism drew. First comes the materialism, drawing its inspiration largely from Maurras, Sorel, and other French sources, in part a protest against atomic individualism, but more positively a craving for national magnitude and imperialist expansion. The government of a nation, thus realized as a living unity, must be in the hands of those who are capable of grasping and pursuing the good of the whole. Such a government cannot be got by elections on a representative basis. "Duty, discipline, and sacrifice must bind the citizen to the State. The State, not its individual citizens must be free" (104).

Next come the idealists, representing an attempt to give a spiritual significance to the secular institutions of the nation. This idealism, deriving from Hegel, and Italianized by Croce, Gentile, and others, furnished a sort of philosophic support to a strong State and the subordination of individual liberties to law. The third element, probably the most important, is the conception of the 'strong State' itself rooted in the Roman Empire and theorized for modern Italy by Machiavelli. The State is seen as sovereign and absolute, embodying not the popular will (though popular consent is necessary) nor the law, but the power of a governing class in a hierarchy of classes who have their several functions in the State.

Though there is a tendency among political philosophers to exaggerate the conscious part played by theories and ideas in moulding history, these contributory streams of thought help to explain the ease with which Mussolini gathered to his new system a large section of the intelligentzia, and stimulated the active support of the energetic youth of Italy.

Mr. Schneider devotes a good deal of attention to a detailed explanation of the relation of political Fascism to economic Syndicalism, and the skilful combination of the two in the Corporate State. How far a real fusion of the two rival forces has been effected is, however, doubtful. "Sooner or later the issue will have to be faced between authority from below and authority from above, between syndical organization and fascist hierarchy, between some form of democracy and some form of dictatorship" (203). The sort of 'higher socialism' that has been forcibly imposed is unlikely to be permanent.

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The relation of Fascism to the realm of culture is discussed in an exceedingly interesting chapter. Fascism cannot thrive as a merely political and economic structure. It must have, or be, a religion. The process of coming to terms with the Church, essential as it has been shown to be, is not enough. Fascism itself and its dramatic head must have an aura of sanctity. And so we see the sainthood of Mussolini in the making, and a spiritualized conception of Italy as a chosen land, a divine country, the light of the world. The revolt against 'materialism' in modern philosophy and science, the repudiation of traditional forms in the fine arts, and the cultivation of violence as illustrated in futurism, the Fascist appeal to the exuberance, self-confidence, and optimism of youth, have all contributed to the strength of an *élite* who look upon the 'people' as so much material for the moulding will of a superior class. Internationalism, the world outside Italy, the well-being of mankind, have no interest and no significance for Fascism, except so far as they may cramp its energies or threaten to obstruct its free pursuit of its own sovereign purposes.

J. A. HOBSON.

Plotinus. By the Very Rev. W. R. INGE, C.V.O., F.B.A. (London: Humphrey Milford. 1929. Pp. 27. Price 1s. 6d.)

This is an excerpt in pamphlet form from the *Proceedings of the British Academy*, Vol. XV, containing the Henrietta Hertz Lecture on a Master Mind for 1929. It is significant that Plotinus, whom a generation ago it was the fashion to decry for a moonstruck dreamer or a sterile syncretist, should be thus officially recognized as a "master mind." A truer conception of his system, which Dr. Inge well defines as "a mysticism built on a basis of rationalism, an ascetic religion which has not renounced humanism," is gradually winning acceptance both in this country and abroad. There was a time when, "in drawing up the single chapter which was to set Neoplatonism on its right shelf in a collection of fossils, it saved trouble to copy each other instead of grappling with terribly difficult Greek." And it is true to-day that, apart from Creuzer's collection of false parallels and wrong references, the *Enneads* still lack a detailed commentary and even an index. But there are signs everywhere (except perhaps at Oxford and Cambridge) that scholars and philosophers are beginning to take Plotinus seriously. The work of Mr. Whittaker, Mr. MacKenna, and Dr. Inge himself is well known to all English students of the subject; in France, a text and translation are appearing by instalments in the Budé series under the editorship of Bréhier, who has also recently published his Sorbonne lectures on Plotinus; from Germany we are promised a scientific text by H. Oppermann, and a new translation by Richard Harder, while Dr. R. Heinemann has even invented a "Plotinische Frage."

The lecture under review naturally contains little which will not be familiar to readers of Dr. Inge's Gifford Lectures, but it forms an admirable introduction to the larger work, especially for the philosophical student who is not also a classical scholar. Such a student ought perhaps to be warned that the author, as a Christian Neoplatonist, is inevitably tempted at times to minimize the difference between Christianity and Neoplatonism; that the Plotinian Nous, which Inge translates by "Spirit," is far more closely related to the Aristotelian Unmoved Mover than to the Christian Pneuma; and, finally, that when Inge speaks of the Plotinian world of sense as "an imperfect construction," the suggested analogy with Bradley is a little misleading—Plotinus does recognize a constructive element in human perception, but in

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his view the world of sense-experience is in its main outlines constructed for us by the creative Logoi operating in and through Physis. But Dr. Inge's analogies are always interesting, even where he is inclined to emphasize them at the expense of distinctions; and his general exposition of the system is as penetrating as it is lucid.

E. R. DODDS.

Greek Thought and the Origins of the Scientific Spirit. By LÉON ROBIN, Professor in the University of Paris. (London: Kegan Paul, Trench, Trübner & Co., Ltd.; New York: Alfred A. Knopf. 1928. Pp. xx × 409. Price 21s.)

M. Robin's book on Greek thought has been for some years familiar to most students of the subject who were capable of using it in its original French. And the present translation into English is very welcome, particularly as the translator, Mr. M. R. Dobie, appears to have done the work extremely well. I have not compared it in detail with the original, but there are certainly no obvious misunderstandings, and he has succeeded to a remarkable degree in the task—much more difficult than is sometimes realized—of producing a version which, while faithful to the original, reads throughout like the work of a good English prose-writer.

The purpose of the work itself is sufficiently explained by the title. What is perhaps most remarkable about it is that it succeeds in the space of four hundred pages in giving a really adequate sketch of the whole development of Greek thought from the first beginnings down to Proclus. One would be inclined to say beforehand that it was impossible. Yet one has only to read M. Robin to see that it has been done. And the extraordinary thing about it is that we never get the effect of undue compression or of a mere summary outline. On the contrary, on each particular point it gives the effect of dealing with it in a full, even in a leisurely way.

In dealing with a book that covers such a wide field it would be impossible within the limits of a review to discuss individual points. There are naturally points of detail on which one might differ from M. Robin. Yet such is the depths of his learning and the balance and sanity of his judgments that one would rarely feel confidence in so doing. There are other points in which, without positively differing from him, one would like to hear the case argued a little more fully. Yet here again it is remarkable how much information he manages to give us within this relatively narrow compass, not only about the conclusions at which he arrives, but also about the arguments and the evidence on which these conclusions are based, and even, in places, about the other conclusions that have been maintained. One may add that there is an excellently selected bibliography. There is certainly no other work in English on anything like the same scale which could possibly compete with this.

G. C. FIELD.

Progress and Religion: An Historical Enquiry. By CHRISTOPHER DAWSON. (London: Sheed and Ward. 1929. Pp. xviii + 254. Price 10s. 6d. net.)

It is seldom I have read a book which I have found of so great interest and importance, for the wide range of knowledge is accompanied by a mastery of thought. So far as I have been able to apply the test of personal knowledge,

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I have found the statements accurate and the conclusions discriminating. The book is well written; one feels that it has been written *con amore*, that the author's heart as well as his head is in the undertaking; but nowhere do I find feeling perverting judgment, but rather stimulating it. The book deals with the most vital issue of to-day: Can the progress of our civilization and culture be maintained; and if it can, by what agency? The title indicates the answer. The author believes that Progress can be maintained only by Religion; and this he seeks to prove, and in my judgment succeeds in proving, by "an historical enquiry," as his sub-title indicates, of a thoroughly comprehensive character. While there is a very full Table of Contents to show the course of the argument, there is no Index, an omission of which in a volume of this kind one has a right to complain, but this is my only complaint. The cordial commendation of the volume must be justified by a brief summary of the contents, with some suggestive quotations.

The first two chapters deal with the Idea of Progress from the standpoint of Sociology and of History respectively. The first chapter shows that the idea of Progress was based on the rationalist faith of the eighteenth century *Aufklärung*, was sustained in the nineteenth century not only by the actual achievements of science and industry, but also by a materialistic doctrine of evolution, and was not altogether abandoned as a result of the recent anti-intellectualist reaction towards Pessimism. The second chapter traces the idea to its other source in the German idealist interpretation of history "as the progressive manifestation of Absolute Spirit," and gives a full discussion to the reaction from this idealism in Spengler's theory of the rise and fall of separate cultures. The author denies that it is universally true that all cultures are hermetically sealed from one another, and insists that history shows also intercultural transmission of inventions and ideas, resulting in mixed forms of culture. These two chapters state the problem.

The answer begins in the third chapter with a consideration of the light which anthropology may throw on the theory of progress; here is given an interesting account of the origin, the development, and the conditions of what may be called relatively primitive cultures. The author rejects the theory that all resemblances between cultures are due to the uniformity of human nature without any intercultural borrowings; but he also regards the rival theory of derivation of cultures from one source as an over-simplification.

Chapter four, with the aid of the Comparative Study of Religions, shows that it is not environment alone which determines a culture, but that there are also mental and moral factors; religion especially as a sense of dependence on superhuman powers is "the womb of civilization." Although religion, he admits, is often contaminated and weakened by mythology as crude speculation, yet he holds that even primitives have in their religion profound experiences which verge on mysticism.

The fifth chapter, in opposition to the blindness of the sociology of the eighteenth and nineteenth centuries, insists on the importance of religion as a cultural factor. The argument of this chapter is summarized in the opening sentences of the next chapter. "It is," he says, "difficult to exaggerate the debt that the world owes to the archaic ritual cultures of the type described in the last chapter, for they laid the foundations on which the whole later development of civilization has been built. To them we owe the invention of writing and of the calendar, the discovery of the use of metals, architecture and engineering, and almost all the arts and crafts of daily life as they are practised down to the present day in both the Near and the Far East" (p. 117).

The sixth chapter turns from the now extinct cultures and religions to trace the rise of the World Religions. A discerning and appreciative account is

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given of the changes in the religious thought of China, India, Persia, and Greece. "In all the great civilizations," he writes, "from China to the Ægean, the beginning of the new movement of thought is marked by the appearance of the conception of a universal order which is both spiritual and material, at once the order of justice and the order of nature. . . . The pioneers sought for a yet higher principle, an absolute reality which transcends the order of nature and all limited forms of existence" (p. 127). The author points out the result of this movement. "The whole tendency as represented by Buddhism and the religion of the Upanishads, as well as by the Taoist mysticism, is to cause a turning-away from human life and social activity towards the Absolute" (p. 135). Consequently, "the Oriental cultures, which are based upon the new type of religion, tend to become stationary and retrograde" (p. 138). The conception of existence as cyclic leads to pessimism and fatalism.

The author in the seventh chapter shows how, in contrast to these religions and cultures, the rise of Western Civilization can be traced to Christianity. A few sentences will indicate the argument offered: "The Jewish affirmation of the significance and value of history found a yet wider development in Christianity. The world process was not conceived as an unchanging order governed by the fatal law of necessity, but as a divine drama whose successive acts were the Creation and Fall of Man, his Redemption, and his glorious restoration" (p. 156). "It was to this consciousness of its unique character and mission that Christianity owes its extraordinary powers of expansion and conquest which revolutionized the whole development of Western civilization" (p. 157). The Eastern World, "with the coming of Islam, reverted to a simpler type of religion, which felt no need for any incarnation of the divine, or any progressive transformation of human nature." But "in the Roman West, in spite of its lower standard of civilization, the conditions were more favourable to the development of an original and creative Christian culture" (p. 162). We need not follow the details of the author's excellent account of this development to the time of the Renaissance and the Reformation.

The eighth chapter shows how on the Renaissance and the Reformation there followed the secularization of Western Culture and the Rise of the Religion of Progress. The author regards the Renaissance as a reassertion of Latin culture, and the Reformation as an assertion of cultural independence by Northern Europe, and supports this view by reference to the geographical distribution in Europe of Protestantism and Roman Catholicism respectively. He endorses the description of Lutheranism as "a spiritual Peasant revolt"; the secular progress he traces to the Renaissance, and not the Reformation; and he poetically describes modern science as "the child of a marriage between the artistic genius of the Renaissance and the mathematical idealism of the Platonists" (XV). He shows how, despite the separation of religion and culture, religious belief remained dominant, and how the divisions it provoked resulted in a secularist toleration, and in the form of the Deism of the eighteenth century in the wide spread of what claimed to be a universal religion of pure reason, which, however, can be described as "the ghost of Christianity." In the current thought the belief in a future life was replaced by a belief in human perfectability and indefinite progress; but, as a reaction against the French Revolution, there was a return to the Christian tradition. "Shelley," says the author, "in spite of his worship of Hellenic antiquity, unconsciously derived his ideals from the religious tradition which he so bitterly attacked" (pp. 197–8). Socialism, he argues, may be regarded as a secularized Apocalyptic, and the German philosophers as giving a religious interpretation of the idea of Progress which was fully developed and dominant in the first half of the nineteenth century.

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With this century the ninth chapter deals in two aspects, as the Age of Science and Industrialism, and as the Decline of the Religion of Progress. The author shows how the advance of science and the expansion of industry have brought disillusionment and social discontent, and how a need of social and religious unification is growingly being felt. His conclusion deserves to be given fully: "This spiritual alienation of its own greatest minds is the price that every civilization has to pay when it loses its religious foundations, and is contented with a purely material success. We are only just beginning to understand how intimately and profoundly the vitality of a society is bound up with its religion. It is the religious impulse which supplies the cohesive force which unifies a society and a culture. The great civilizations of the world do not produce the great religions as a kind of cultural by-product; in a very real sense the great religions are the foundations on which the great civilizations rest. A society which has lost its religion becomes sooner or later a society which has lost its culture" (pp. 232-3).

Chapter X, the Conclusion, discusses the possibility of "a neo-paganism which will possess the same attitude to nature as the primitive and archaic religions, while replacing ritual magic by scientific law," as an alternative to Christianity. While admitting that this is not intrinsically absurd, the author maintains that on the one hand—"man cannot worship the natural forces he conquers and exploits," and on the other that the religion of "evolutionary vitalism—God the ideal emergent in man" is "not purely scientific, not the obvious interpretation of the evolutionary process." Further, he insists that the alternative for Europe is either an abandonment with Christianity of faith in progress and humanity, or a return to the religious foundations of her culture—historic Christianity, which alone can supply the dynamic for philanthropy, social reform, and scientific organization. "A religious movement which attempted to turn its back on the spiritual achievement of the last three thousand years would be far more retrograde than any anti-scientific reaction to the historic religions of the past" (p. 238). "It is in historic Christianity, far more than any purely rational creed, that the Religion of Progress finds its satisfaction. For here we have not an abstract intellectualized progress, but the emergence of new spiritual values in a concrete historical sense. A new *kind* of life has inserted itself into the cosmic process at a particular point in time under definite historical circumstances, and has become the principle of a new order of spiritual progress" (p. 245). Christianity and science are not opposed. "The progressive intellectualization of the material world which is the work of European science is analogous and complementary to the progressive spiritualization of human nature which is the function of the Christian religion" (p. 247). Such a harmony would secure international unity, "not in a superstate, but a spiritual society."

ALFRED E. GARVIE.

The Intuition of God : An Introduction to the Philosophy of Mysticism (Hastie Memorial Lectures, 1927). By REV. T. M. WATT, M.A. (Edinburgh and London: Wm. Blackwood & Sons. Pp. ix. + 135. Price 5s. net.)

These four lectures endeavour to prove that men can have and have had intuitions of God, that is, certain direct apprehensions of God, the ultimate reality, which are not the result of any process of reasoning, but which on scrutiny are not found inconsistent with reason. The first lecture is devoted to a number of quotations from very varied sources to show how widely the possession of such intuitions has been recognized, and not by mystics only

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and how variously the relation of these intuitions to reason has been conceived. "Our Intuitions and apprehensions of God," the author says—"not to be denied the status of knowledge—react on the soul by awakening our deepest and most exalted emotions. Religious experience involves knowledge, but not in the first place that of discursive reasoning, but rather the immediate 'intuition and feeling of God', which is the real foundation of all religious knowledge" (p. 26). Bergson is criticized as drawing the distinction between Intellect and Intuition too sharply (p. 18).

The author recognizes that his thesis is challenged in the name of psychology, and in the next lecture he seeks to vindicate the objectivity of the intuition of God against the attempt of Leuba's *Psychological Study of Religion* to reduce the idea of God to a subjective rationalization. He specially criticizes Leuba's separation of "the metaphysical God" and "the empirical," with which alone religion is concerned. "Such teaching implies," he says, "a divorce between metaphysics and religion, which is destructive of a valid metaphysic, and likewise of a vital religion. A metaphysic which ignores the data of religious experience and a religion which stands aloof from the age-long quest of philosophy are both truncated and one-sided approaches to Reality" (p. 39). Ritschlianism is also criticized for its radical subjectivism. While appreciative of mysticism generally in its positive affirmation of the soul's contact with God, the author regards the negative way of apprehending God in the mystical piety, which insists "that mystic states are ineffable in character" (p. 69), as one-sided, although he admits its merits that "it gives emphatic expression to the soul's sense of the absolute transcendence of God." He holds with Otto, however, that there is a better way than this of preserving the divine transcendence for our thought, even the Christian.

While the author's general attitude is to insist that intuition is complementary to, and not contradictory of, reason, he finds it necessary, in his fourth lecture, in view especially of Otto's book on *The Idea of the Holy*, to face the question of *the Non-Rational in Religion*. He fully appreciates the value of Otto's contention for "the objective character of religious experience" (p. 79), but he queries Otto's description of this type of experience as "non-rational." He notes that Otto recognizes a moralization and rationalization of the non-rational *shudder* before the *numinous*; yet he points out that for Otto "even Christian experience lays its warp of the rational and the ethical across the woof of the non-rational numinous experience." Agreeing with Otto's emphasis on mysticism even in Christian experience, he insists that "mysticism is not a foe to reason; it does not dwell in the region of the non-rational" (p. 84). Acknowledging the value of the mystic, in whom this type of experience is dominant, he also pleads for the appreciation of the mystical element in religious experience generally. "An exaggerated importance," he wisely says, "has been put upon the study of the abnormal forms of religious experience. It is, however, in milder forms that we can discover the universal elements in religious experience" (p. 94). He contends that "at the heart of Protestantism there is a true and profound mysticism," in opposition to the view that mysticism is the distinctively Catholic type of piety.

In his fourth lecture the author seeks to relate this Christian mysticism to theology. He shows that mysticism is not inconsistent with the faith on which Protestantism insists, for faith "signifies a complete self-dedication, and this is just what the true mystic asserts" (p. 106). Nor is it inconsistent with the historical character of Christianity. "The mystic spirit of man in its reawakening with the birth of Christianity found that the intuition of God was now qualified by the personality of Jesus Christ as the unique mediator and revelation of God" (p. 110). "Intuition is thus enriched by a new fact,

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the Historic Person Jesus Christ, and by a new human attitude towards that fact, namely, faith in Him" (p. 112). From this point of view the Fourth Gospel and Paul's experience are discussed, as also the two foes of mysticism, moralism, as represented by Judaism, and intellectualism, as represented by Gnosticism. The two questions, with the treatment of which the volume ends, are: "(1) The mystical element in religion in its relationship to the other factors involved. (2) The individual mystic in his place in the great society, the Church of Christ" (p. 123). The author's conclusions are: (1) that "the mystic seeks after that all-round development of the religious spirit, which, as in the rest of our spiritual growth, is most to be desired" (p. 127); and (2) that "the mystic consciousness is at home within the Church of Christ, though it has many expressions in other religions" (p. 130).

The book deserves cordial commendation. The exposition of intuition as a mode of knowing God, and the defence of its objectivity are a useful contribution to religious thought. The insistence on the place of reason in religion, and the secondary place given to the abnormal accompaniments of mystic experiences show a sound judgment. Whether the extension of the term mysticism to cover all first-hand religion, all personal experience of God, is desirable may be doubted, as the term historically has been associated with a peculiar type of piety—and not Christian religion generally—and under cover of a common name the differences of the one from the other may be confused. The book illustrated that for which it pleads, an alliance of religion and reason.

ALFRED E. GARVIE.

Roger Bacon. Annual Lecture on a Master Mind. From the *Proceedings of the British Academy*, vol. xiv. By A. G. LITTLE, D.Litt. (London: Humphrey Milford. 1929. Pp. 34. Price 2s. net.)

Mr. Little, who, along with Mr. Withington, recently delighted all good mediævalists with an edition of Roger Bacon's medical works, here contrives, in the narrow space of a single lecture, to present an extraordinarily vivid, judicious, and informative picture of the great Franciscan friar—his mind, his time, his influence, his outlook. In general, Mr. Little holds that Friar Bacon was rather a magnificent encyclopædist than a profoundly daring innovator; but it has to be confessed that Mr. Little is tantalizingly brief concerning the optical experiments that he admits to have been what, in the jargon of the present age, would be called a genuine piece of scientific research on Roger Bacon's part.

The question whether Bacon was "modern" or "mediævally" minded is one that can hardly be decided without an arduous preliminary inquiry into the debatable question how far the mediævals really were unmodern. Granting that they were disposed to speculate rather too promptly upon supposedly positive data rather shakily established, it is still a question whether their minds were darkened—or ours enlightened. But if we are to attempt to decide such intricate matters, we could hardly have a richer instance to examine than the master mind of Roger Bacon—even if, as Mr. Little plainly suggests, the master mind was, in many ways, a mastered mind. If it is proof of a mediæval mind to be mastered by theological preconceptions, Bacon, as these pages show, resembled a mediæval much more closely than a modern positivist. The French sociologists would say that he was prelogical in his attitude. Yet even a modern might maintain, without

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sacrifice of modernity, that "a particular nature is obedient naturally and not by violence to universal nature." And universal nature need not be understood non-theologically.

It would seem, however, that Bacon's mind was either too big for consistency or temperamentally unsuited to the systematizer's task. A man who was pragmatist, experimentalist, mystic, linguist, grammarian, theologian, and astrologer all in one usually has such a mind, if anything can be said to be usual in connection with such an unusual assemblage of talents. Such a mind in any age must retain a permanent fascination, if only materials are extant for the study of it. Present-day scholars have presented, and are presenting, these materials very amply; and there could hardly be a better introduction to the study of them than this brilliant little essay of Mr. Little's.

JOHN LAIRD.

Thomas Aquinas, His Personality and Thought. By MARTIN GRABMANN, authorized translation by VIRGIL MICHEL, O.S.B., Ph.D. (New York and London: Longmans, Green & Co. 1928. Pp. ix + 191. Price 10s. 6d. net.)

To anyone desirous of acquainting himself, without overmuch effort, with the essentials of the life and teaching of Thomas Aquinas, this book is admirably suited. Simple and unassuming, yet obviously the work of one who has a thorough knowledge of Aquinas's writings and of the period, it presents in some 120 pages a survey of the vast system of Thomistic philosophical theology, preceded by some 70 pages devoted to a brief biography of the saint and to an outline of his qualifications and of the sources from which he drew.

In so short a work Dr. Grabmann naturally confines himself to an exposition, and makes no attempt to defend or criticize, but in a straightforward manner, and with surprising freedom from technicalities, describes the structure of the Thomistic metaphysic, beginning with the fundamental principle of the objectivity of Thought, and the great corner-stone of the doctrine of Being. A chapter on the relation of Reason to Faith makes it clear that, whilst St. Thomas's Christian faith permeated and illuminated all his speculations, his was a no mere *credo ut intelligam*. He insisted on the importance and scope of the purely natural reason, declaring that "error in regard to creatures only too readily leads to false views regarding God." For God is, of course, the central point of the system, to which all else is, and must needs be, subservient; and this "theocratic character of the thought of St. Thomas is the reason and the source of the peculiar genius of his writings." Man, none the less, is by no means disregarded, for to St. Thomas the nature of the human soul and the processes of human knowledge are questions which in themselves are of great interest and importance. So they were to Aristotle; but nowhere do we realize more the magnitude of Aquinas's debt to Aristotle or the skill with which he transforms the master's thought than in the Thomistic Ethics. Here the conception of *εὐδαιμονία* as the life of wisdom or contemplation becomes explicitly the *motus rationalis creaturæ ad Deum*; the place of *φιλία* is taken by the virtue of *caritas*, the supernatural love of God and our neighbour; above all, the *λόγος*, the norm of the good life, is given not by *φρόνιμος*, but by God Himself, and is traced back to the *lex æterna*, "the great plan of the world rooted in God's holiness and wisdom."

In 1924 there appeared, under the title of *The Philosophy of St. Thomas Aquinas*, a translation by Fr. G. A. Elrington, O.P., of Etienne Gilson's

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le Thomisme, and as Gilson ranks first amongst French writers on the history of mediæval thought, so Grabmann is in the very front rank amongst German scholars who have devoted their lives to the same subject. Both have written valuable works on St. Thomas, and both translations are good. What we need, however, is a work on St. Thomas by an Englishman, and this, we understand, is shortly to be supplied by the pen of Fr. Martin D'Arcy, in the *Leaders of Philosophy Series*, published by Ernest Benn.

L. J. W.

God Infinite and Reason, concerning the Attributes of God. By WILLIAM J. BROSNAN, S.J., Ph.D. (New York: The America Press. 1928. Pp. 236.)

This work is a continuation of the author's *God and Reason*. It discusses the attributes of God in the thesis-form, familiar to all students of Scholastic textbooks. Ten theses are formulated and explained, contrary doctrines being disposed of before a formal syllogistic proof is adduced. There follow certain corollaries, and then a discussion—also in syllogistic form—of the various objections that may be raised. Of particular interest is Thesis X, which repudiates pantheism in each and all its forms, but notably that of Spinoza. One could, however, have wished that, instead of basing his argument on the nature of the attributes already proved, the author had given also an independent proof, based on finite personalities and moral freedom.

Whilst welcoming this presentation in English of the time-honoured arguments of the schools, one cannot but wonder whether so formal a method of reasoning will appeal to the modern student of Natural Theology. For better or for worse, we have moved a long way from the Middle Ages, with its fondness for the syllogism and its love of distinguishing the various senses in which a word or a sentence may be understood. But Fr. Brosnan is not out to propitiate the philosophers of his own times. He is well aware that to the modern philosopher his book will make no appeal, but "the preventing obstacle," he thinks, "is not merely the form in which their matter is cast," . . . "but the false theory of knowledge on which modern philosophy is all but universally built."

L. J. W.

The Philosophy of John Dewey. Selected and edited by JOSEPH RATNER. (London: George Allen & Unwin, Ltd. 1929. Pp. xii + 560. Price 16s.)

If selections unaccompanied with criticism of any kind are ever useful, these are. They are taken from a wide variety of sources, and are comprehensive enough to give an adequate idea of Mr. Dewey's views. Moreover, in spite of Mr. Ratner's belief that the chapters could be read in any order, the logical order in which he rightly, with few exceptions, claims to have arranged them adds to the value of the book.

The first five chapters deal with the method of philosophy, the foundations of metaphysics, and what, to distinguish it from psychology, may be called the metaphysics of mind. The selections in these chapters are representative both of what is clear and of what is obscure in Mr. Dewey's view, for they contain what he says about both teleology and meaning. They are also, with the possible exception of those in Chapter III, well chosen. It is doubtful whether this chapter on the foundations of metaphysics will, as it intended, enlighten the lay reader.

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Three chapters on various aspects of instrumentalism follow. Here the selections are excellent. This is also the case with the two following chapters on the psychology of habit, impulse, and intelligence. These two chapters clearly show how Mr. Dewey's views differ from those of the behaviourists, from a pragmatist's such as James, and from a theory of instincts such as McDougall's.

Chapters XIII–XVI, which contain selections from Mr. Dewey's views on such practical concerns as education and social groupings, are fitly preceded by two chapters on ethics. The selections they contain admirably indicate how principles described in previous selections are applied to special cases.

The chapter on Art and Religion presupposes certain of the metaphysical views expressed in Chapter III and elsewhere, and is clearly connected with Mr. Dewey's view on education. The selected passages in it do not conceal the fact that Mr. Dewey has at least three, by no means obviously compatible, definitions of art.

The book concludes with selections concerning the origin and definition of philosophy. In my opinion it is this chapter alone which might have been omitted or placed in any other position in the book without serious disadvantage. Thus the claim made by Mr. Ratner in his preface, namely, "the material in this volume . . . constitutes a unified and comprehensive outline of the total range of Mr. Dewey's philosophy," is justified.

It is a pity that the index is not more adequate.

E. M. WHETNALL.

The Vedānta and Modern Thought. By W. S. URQUHART, M.A., D.Litt. (London: Oxford University Press: Humphrey Milford. 1928. Pp. xiv + 256. Price 12s. 6d.)

This book is one of several already published, which are part of a series entitled "The Religious Quest of India." The writers of the series are, as the editorial preface states, governed by two motives, namely, an endeavour to work in the "sincere and sympathetic spirit of science," with a "desire to understand and dispassionately to estimate Indian thought and life," which they then seek to contrast with Christianity. Theirs is the modern method of propaganda by means of the so-called "sympathetic approach," in lieu of the rudeness of some of the judgments of an earlier day. Such judgments, however, were given by others also than the English. Thus the author cites the case of an English-speaking (and it may be missionary-educated) Hindu, who, charging that the "Pantheism" of the *Vedānta* has been the "opiate of wicked hearts," says that it should rather be called "Pan-Diabolism." The author demurs to this judgment as being too "harsh." He takes it too seriously. Its mimetic author was simply absurd.

The book may be divided into three parts, namely, historical, expository (with a constant polemical accompaniment), and lastly a comparison of *Vedānta* with "Modern Thought."

In the first part the author follows a well-beaten path, and gives, for the purposes of such a book as this, a sufficient résumé of European research, theories, and guesses concerning their subject-matter.

The second or expository part invites criticism on so many matters that only a few points can be dealt with here.

The book deals with the leading Master-Teachers of *Vedānta*, Saṅkara, and Rāmānuja, but principally with the first as a philosopher. There are two sides, however, to his character. He was primarily a man of religion, and of

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deep piety and devotion. It is a great error to suppose that there are no devotees (*Bhaktas*) amongst the non-dualist *Māyāvādin Vedāntins*. If we will attend to this side of his character, we shall then the better understand his doctrine. We shall not, for instance, speak (as some do) of an "illusory God." The ritual aspect of Hinduism has been neglected, though it is a concrete practical expression of the doctrine. Saṁkara believed that Revelation (*veda*) was the sole source of truth as regards the supersensible. Saṁkara was also a philosopher in so far as he sought to show that Revelation is in conformity with reason. The same Brahman which manifests in the form of Veda (*Veda-mūrti*) as sound or the word also displays itself as the reason of man. We cannot then separate Saṁkara's Religion from his Philosophy. The question has been asked whether *Vedānta* is a Theology or a Philosophy. The author treats it rather as the latter, "attempting to do the work of religion." How, then, he asks, can it as a philosophy satisfy religious needs? The answer is that we must take Religion and Philosophy together. Revelation as the Vedas has three sections, of which the first two deal with formal ritual (*karma*), and devotional worship (*Upāsanā*), and the third, *Jnāna*, or the Indian *Gnosis*, is contained mostly in the *Upanishads*. The third presupposes the first two. Devotional striving (*Sādhanā*) leads, through the purification which is its effect, to *Yoga*. Perfected *Yoga* is Supreme Experience. Authority, Reason, and Experience thus coincide. The author in the passage next cited calls *Vedānta* a speculation. This, however, it is not. He speaks of Saṁkara as "fairly submissive" to the authority of *Upanishad*. If this ambiguous expression means that he was in any degree disloyal to it, the statement appears to be without warrant. Revelation is the basis on which he philosophizes. Nor is such a charge consistent with the passage (p. 78) in which the author says " Saṁkara's apparent abdication of private judgment, his reliance on instruction imparted by another, and his abhorrence of unfettered thought, are disconcertingly suggestive of the narrowness of European mediæval philosophy, and seem to place a deep chasm between *Vedāntic* and modern speculation." Without further discussion of this statement we may observe that the "chasm," if any, is not between two speculative systems, but between a doctrine based on Revelation with its certitudes, and other systems in which conclusions of probability only are drawn as the result of mere speculative reasoning.

The author speaks of Saṁkara's philosophic attitude as "idealistic." There is always a danger lurking in the use of English terms in an account of Indian philosophy. In an epistemological sense Saṁkara's system is realistic. He strongly combated the subjective idealism of some of the later Buddhists. Matter and Mind are for him two co-existent Reals. Again, when appraising the metaphysical character of his system, it must be remembered that Ultimate Reality as *Chit*, as it is in itself (*Svarūpa*), is neither Mind nor Matter, though it is the origin of and manifests as both, of which it remains the essence. In common with nearly all English books on *Vedānta*, this fundamental concept *Chit*, translated in this book as both "Consciousness" and "Intelligence," is left unexplained. Such explanation was the more necessary in that there is no adequate term in any other language which will render the Sanskrit word *Chit*.

Saṁkara's system is, of course, as disputable in its premises as any other. But given him these premises, his standpoint, and his aim, his is a logically well-knit system, though the reader of this book who comes to the subject for the first time will hardly think it to be so. If he has such previous knowledge he will perceive that, when the matter is not one of conflict arising from philosophical or religious preference, it is rather the nature of the author's understanding of Saṁkara than the latter's doctrine itself which is generally

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at fault, as in the case of the charge of inconsistency which the author makes against Saṁkara as regards his polemic against the subjective idealism of the later Buddhists. The reader's difficulties may be increased by the author's discursiveness, and the difficulty, at times, of ascertaining what are his conclusions, in part due to a tendency to clog them with ambiguous qualifications. Thus, he himself uses as a rendering of the word *Māyā* the terms "illusion" and "illusionism," and, in fact, goes so far as to speak of *Māyā* as "a cosmic phantasm-creating energy." Nevertheless, he expresses the opinion that it is wrong to accept the interpretation "illusion" in a "crude and literal sense." The term "illusion," however, has a definite philosophical meaning, and it is quite possible to say "Yes" or "No" to the question whether the Sanskrit term *Māyā* is correctly rendered by the English word "illusion." Moreover, what is meant by the qualifying words "crude and literal sense?" It may be noted here that he seeks to make Saṁkara in part responsible for such misunderstanding as there may be, and cites a passage from the Sacred Books of the East (translation); but on reference to the Sanskrit Text the word translated as "of the nature of illusion" is found to be *Māyāmayī*, which means "of the nature of *Māyā*," and therefore this particular citation carries us no further.

As regards the third part, though the title of the book is *Vedānta and Modern Thought*, thus suggesting that its prime purpose is a comparison between them, only twenty-three pages out of two hundred and fifty deal with this interesting subject. So far, however, as they go they are useful. By "Modern Thought" the author says that he means the systems of Spinoza, Leibnitz, Kant, Schelling, Hegel, Schopenhauer, and a few other English philosophers of later date, to whom cursory reference is made. This brief account is the more disappointing because quite recent Western thought on physics and metaphysics, psychology, and metapsychics may be usefully compared with some ancient fundamental Indian concepts in respect of ultimate "neutral substance," power and energy (*Shakti*), the nature of mind and of perception, unconscious mental process, the degrees of material substance, the dematerialization of "matter" in its gross sense, and other matters of importance.

JOHN WOODROFFE.

The Vedānta according to Saṁkara and Rāmānuja. By S. RADHAKRISHNAN. (London: George Allen & Unwin Ltd. 1928. Pp. 287. Price 10s.)

The contents of this book were first published as part of the second volume of its author's *Indian Philosophy*, issued in 1927. They have been separately printed, firstly with a view to meet the wants of those who desire to learn about *Vedānta* only, as distinguished from other orthodox Indian "systems" (*Darshana*); and secondly because Saṁkara and Rāmānuja are commonly considered to be the most important and influential of all its interpreters. This mode of separate publication of part of the contents of the author's *Indian Philosophy* seems to the reviewer to be of doubtful utility, because the Vedānta cannot be fully understood without reference to the other five "systems." These "Six Systems" taken together constitute the Corpus of philosophical Brahmanism. Further, it is the *Nyāya Darshana* which supplies the terms as also the logical method used in Vedāntic controversy. The author's presentment of the subject-matter, however, makes up in good part for the lack of completeness involved in this separate treatment. Moreover, those who wish to pursue the matter further may have recourse to the whole work (*Indian Philosophy*), of which the present volume is only a portion.

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That work has already been reviewed, and has been favourably received as a contribution of great value towards the history of Indian Philosophy. The author, in this part, contrasts these two systems of *Vedānta*, noting their chief points of difference in two sections entitled *The Advaita Vedānta of Saṁkara* (pp. 1–224) and *The Theism of Rāmānuja* (pp. 225–287). These titles may foster the popular error that there is no Theism in Advaita Vedānta. If so, the mistake will be corrected by the author's reconciling observation (p. 298) that Theism is what "even Saṁkara allows in life and religion. It is the faith of Hinduism, whether in its Vaishnava, Smārta, Shaiva, or Shākta forms."

He then points out that Western thinkers generally overlook this fact and persist in identifying Hinduism with a particular form of "Monism." At page 14 he records the tradition that Saṁkara was a member of the *Shākta* community. To whatever religious community he belonged, he was not merely a philosopher, but a practising devotee (*Bhakta*). It seems to be commonly thought that there is no *Bhakti*, and that there are no devotees in that great school of Vedānta of which he was the chief scholastic. This is, of course, not so. There are *Bhaktas* who are also *Advaitins*. The worshipper is always a dualist, whether he, as a philosopher, is or is not a non-dualist. He worships his Lord as other than himself, though (according to *Advaitavāda*) in complete *Yoga* he and the object of his worship are one. If it be asked how the Changeless One can become the Changing Many, the *Advaitin* of this school will reply that it is the work of inscrutable *Māyā*, which term the author says thus registers our "ignorance." Another Indian author (P. N. Srīnivasachāri) has recently said that if the equilibrium of Indian thought is to be maintained, adequate justice must be done both to the metaphysic of Rāmānuja and the religious fervour of Saṁkara.

Professor Radhakrishnan writes (p. 224) that "Saṁkara recognizes that there is a region that we cannot penetrate, and a wise agnosticism is the only rational attitude." This observation may give rise to misunderstanding. The English reader must not suppose that Saṁkara was agnostic in the Western sense. Ultimate reality cannot, it is true, be conceived by the mind, or expressed by words, but it is not, according to *Advaita Vedānta*, unknowable. On the contrary, it is revealed in the *Vedas*, is in a veiled manner known in every act of knowing in which it is the knower, and is directly and immediately experienced beyond all veiling in *Yoga* ecstasy, which surpasses the limits of empirical consciousness. In that supreme experience the "bonds" of *Māyā* no longer hold.

In common with the writer of this review, Professor Radhakrishnan, who is well aware of what may be urged to the contrary, is of opinion that the word "illusion" is not a proper rendering of the Sanskrit term *Māyā*. It is in fact a translation which has been the source of much confusion and error. He suggests the word "Appearance." Saṁkara defines the Real as Changeless. Therefore the world is not real in that sense. Relative to the real it is unreal; but the universe possesses phenomenal truth for all who form part of it. It appears to be real just because it in fact appears against the background of, and is supported by, the Real. There are some matters in the various topics discussed to which some may take exception, but if so, they do not affect the value of the book as a whole. The author's learning is sound, his thinking is acute, and his style is incisive. This combination makes such lively reading that we wish he had given more space to his account of Rāmānuja, whose system is so much less known than that of Saṁkara. The book is badly in need of a Table of Contents and of an Index.

JOHN WOODROFFE.

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Rāmānuja's Idea of the Finite Self. By P. N. SRĪNIVASACHĀRI. (London: Longmans, Green & Co., Ltd. 1928. Pp. xii + 125. Price 5s.)

This small volume deals with the Vedantic system called *Visishtādvaita*. According to the foreword by Mahāmahopādhyāya Vidyāvācaspati S. Kuppuswami Sastri, this term (*Visishtādvaita*) has been generally wrongly rendered. He suggests the title "Pansynthetic Monism," the central idea being the synthetic unity of God as the immanent Spirit of the universe both animate and inanimate. It is the doctrine of the Absolute as an organic unity, consisting of God as the "body-possessor" (*Sarīrin*) and the universe as His "body" (*Sharīra*). The universe consisting of the sentient and insentient is a mode (*Prakāra*) of God. He stands to it as does man's soul to his body in the well-known lines of the poet Pope. He is the Self of all creation imparting reality to the finite self and through it to matter. In one sense the attribute is essentially distinct from the substance; in another sense it is one with it. The two aspects are reconciled by the concept of *Amsa*, or part. Finite personality is not annulled by supreme experience. *Māyā*, in the sense in which Saṁkara uses that term, is rejected. The author, referring to the theory of the "co[illegible]versal," says that it fits in neither with the view of Saṁkara [illegible] He confuse[illegible] Rāmānuja (p. 80). This small book on an important Vedantic children's magic[illegible]d the authoritative approval of Mahāmahopādhyāya S.

M. Lévy-Br[illegible]tri, who says that it renders the fundamental tenets of the he says, prim[illegible]chool intelligibly, and in a manner to preclude any further persons and [illegible]on of those tenets. To this recommendation the writer adds tha[illegible]on of his hope that Professor P. N. Srīnivasachāri will some day [illegible]ve us a larger and more detailed work of a System which is less known to English readers than it ought to be. The book has the great advantage for such readers of possessing a glossary of the Sanskrit terms used in the Text.

JOHN WOODROFFE.

[illegible]storical Introduction to Modern Psychology. By GARDNER MURPHY. International Library of Psychology, Philosophy, and Scientific Method. (London: Kegan Paul, Trench, Trübner & Co. 1928. Pp. xvii + 470. Price 21s. net.)

[illegible]o reviewer can approach Dr. Murphy's book without being conscious [illegible]he magnitude of the task which has been undertaken. He will be even [illegible]e conscious of this when he has completed his reading.

[illegible] enable his readers to appreciate the position of psychology at the [illegible]ning of the nineteenth century the author finds it necessary to give [illegible]hilosophic and scientific outlook of thinkers in the seventeenth and [illegible]lth centuries. Dr. Murphy tries also to trace the lines of psycho[illegible]tions of differen[illegible] in the writings of such philosophers as Hobbes, Locke, [illegible]me; to trace the roots of associationism in Hartley; to [illegible] ogical psychology of such physicians as Cabanis and [illegible] to show the influence of Kant's philosophical specula[illegible] psychology of Germany. So much cannot be accom[illegible]hapter. To a reader who already has a knowledge of philosophers referred to, the treatment may furnish a set facts in a new perspective, but to a reader lacking [illegible]e chapter is at once too full and too brief to be [illegible]

It is interesting to [illegible]ychology in the early nineteenth century is more [illegible] fuller treatment of two outstanding figures, Herbart [illegible]nce of the former on education and of the latter on

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Scottish thought and on associationism is well brought out. But it is when the author comes to the work of the German physiologists who laid the foundations of experimental psychology that the book becomes of value to the student of present-day psychology. The work of Weber, of Fechner, and of Johannes Müller is excellently handled in its bearing upon current topics. The same may be said with regard to the work of Helmholtz and of Hering. Wundt is rightly made a central figure, and no one can fail to see the significance of his work in relation both to what preceded and to what follows. The author seems less happy with a philosophical psychologist than with a physiological experimentalist. Possibly he finds the influence of the former less important in contemporary work. This, however, will not, for an English reader, excuse the author's apparent ignorance of the work of James Ward. The quotation of a short comment from Brett's *History of Psychology* represents all that Dr. Murphy has to say on the subject.

In dealing with contemporary psychology the author has arranged his material on three principles of classification. He deals in separate chapters with the work that has been done on specific topics, such as memory, thought, acquisition of skill, instinct, measurement of intelligence. He also summarizes the work done in different fields of psychology: Child Worships his Lo[illegible]cial Psychology, and the Psychology of Religion. He has othe[illegible]n complete *Yoga* with schools of psychology, viz., Structural and Functi[illegible] the Changeless Behaviourism, Psycho-analysis, Physiological Psychology. [illegible]hool will reply the work of William James might be said to come under this t[illegible]or says thus It is natural that a book written by an American psychologist [illegible]ivasachāri) prominence to William James's work and to his influence on [illegible]poraries. James developed no system, but he was intensely interested i[illegible] many questions. An Englishman might have been similarly tempted to devote a chapter to Ward and Stout, a Frenchman, to Ribot and Binet, though it is to be hoped that neither would have dismissed James in [illegible] footnote.

The chapter on Behaviourism gives a valuable survey of the line[illegible]g. thought that had its origin in the use of the objective method in stud[illegible]he animal behaviour. To-day "Behaviourism" is a label for many psycholo[illegible]d, which differ widely in the degree to which they recognize the subjec[illegible]w- aspect of life, but which all agree in utilizing the biological method[illegible]wn approach. This chapter gives a clear statement of Pavlov's work an[illegible]m- the relation of "conditioning" to association.

When Dr. Murphy looks for the general tendencies which a stud[illegible]ses contemporary psychology may reveal he sees behaviourism as the na[illegible]ds" sequel to much of the earlier experimental study of perception and lea[illegible]who He regards the Psycho-analytic School as representing a contrasti[illegible]t the of interest, viz. interest in the affective and conative exp[illegible]. It is The chapter descriptive of this movement gives the stud[illegible]usion and error. torical setting for Freud, Jung, and Adler, and will enab[illegible]al as Changeless. work in due perspective.

The Genetic method is shown to be important for [illegible]e real it is unreal; since "complicated things are apt, most of the time, to [illegible]o form part of it. The employment of statistics and the use of intellige[illegible]st the background quantitative precision to psychological investigations [illegible]n the various topics that both psychology and physiology are tending to st[illegible]ey do not affect the tatively. "Every new quantitative generalization in [illegible]sound, his thinking nearer the discovery, by both groups, of a system [illegible]s such lively reading the phenomena of the other science in exactly the san[illegible] of Rāmānuja, whose hold for their own" (p. 413).

JOHN WOODROFFE.

The book is badly in

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A supplement on "Contemporary German Psychology" is supplied by H. Klüver. He shows that in Germany to-day there is a "causal" psychology, that is, a psychology developed on the lines of a natural science, and a psychology which he describes as "cultural," or as the psychology developed on the lines of interpreting or understanding. This school is peculiar to Germany. Whereas the *Gestalt* group belong to the former, Spranger and Jasper are cited as representatives of the latter. Spranger in his work on inter[illegible]s of individuality maintains that to understand psychological facts we must start from personality in its cultural setting. The types arrived at, the æsthetic, the theoretical, the economic, etc., are schemes for understanding man in relation to his environment. Jasper working in psychopathology makes use of the same conception of types for understanding and interpreting actual cases, *e.g.*, a type for mania, for hysteria. This section is very condensed, but it gives the foreigner a valuable indication of the lines of work pursued in Germany.

Teachers of psychology recognize the need for a scholarly history of psychological doctrine. Students too often lack the historical background which is so essential to an adequate comprehension of current theories. I said a reviewer completed his reading of the book with a clearer under- He confuse[illegible] the magnitude of the author's task. If, therefore, he concludes children's magic.[illegible]'s book is sometimes lacking in proportion and is not all M. Lévy-Bruhl[illegible] it to be, he will also realize that the writing of such a he says, primitive [illegible]y within the compass of a single volume demands an persons and objects a detachment of view which is possible only to the few. tha[illegible]n directly BEATRICE EDGELL. P[illegible]tion.

The "Soul" of the Primitive. By LUCIEN LÉVY BRUHL. (Translated by LILIAN A. CLARE.) (London: George Allen & Unwin Ltd. 1928. Pp. 351. Price 12s. 6d.)

Professor Lévy-Bruhl's well-known theories of "prelogical" primitive mentality have created more stir in recent anthropology than any other publication, with the exception, perhaps, of Perry's *Children of the Sun*, or Freud's *Totem and Taboo*.

As is always the case with a new discovery, the author at first tends to exaggerate its magnitude. This is, perhaps, only natural, and methodologically justifiable. For, though it vitiates the perspective of the individual contribution, it commands the attention of fellow-students and forces them to consider the new discovery. Thus Lévy-Bruhl's views that primitive man has no really rational outlook, that he is always mystical, and that his mind is built upon an entirely different pattern from our own, are, no doubt, exaggerations of differences that actually exist. But the theory, just because of the extreme form in which it was put, has served as a starting-point for a new line of investigation, and we owe to Lévy-Bruhl and his impetus such works as Rivers's *Medicine, Magic, and Science*, Radin's *Primitive Man as Philosopher*, and many minor contributions by Goldenweiser, Boas, Marrett, and Thurnwald.

Out of the discussion there have emerged a number of important conclusions as to the mentality of primitive man which are now generally accepted.

It is interesting to see M. Lévy-Bruhl himself re-formulating his views in a more considered and critical manner.

The present book is in many ways far better than his two previous publications. In the first place it deals in an analytic manner with the most important

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religious concept of primitive psychology, that of the *soul*; in the second place it eschews some of the exaggerations of the author's previous work; and in the third place it includes, as no other comparative study of early animism was able to do, some of the excellent modern work of such writers as C. G. and B. Z. Seligman, K. T. Preuss, G. L. F. Pitt-Rivers, F. Speiser, Messrs. Smith and Dale, M. Junod, to mention only a few of the best modern field-workers. It is regrettable that the author was not able to include in his survey to the excellent book by Wirtz, Professor Westermarck's absolutely first-rate to field-work in Morocco, and the recent work of Landtman on the Kiwai Papuans.

The little volume is the best comparative study of animism and an excellent modernized supplement to E. B. Tylor's famous classic.

B. MALINOWSKI.

The Child's Conception of the World. By JEAN PIAGET. (London: Kegan Paul, Trench, Trübner & Co. 1929. Pp. ix + 397. Price 12s. 6d. net.)

This is the third volume of M. Piaget's observations of thought in children. The first volume dealt principally with the child's language, [illegible]s in- with his processes of judgment and reasoning.[1] This volu[illegible] complete *Yoga* with the contents of a child's thought, and is the most [illegible]ly the Changeless series. [illegible]gy. [illegible]hool will reply

The method used for obtaining insight into the nat[illegible]r this [illegible]or says thus ceptions of the world is a combination of observation [illegible]ychologist [illegible]ivasachāri) questioned along lines suggested by his own spontan[illegible]luence on [illegible]estioning, an- the answers given are critically examined by the [illegible]inter[illegible]. Such criticism is essential if the answers are to serve as data. The experimenter must know how to distinguish "convictions" from mere random answers and from romancing. Further, the reply, though an answer to the question asked, may have been suggested by the question, and such answers must be separated from those that express the child's own thought. These are of two varieties, "liberated" and "spontaneous" convictions. The term "liberated" is used to indicate that the conviction expressed by the answer may not have been fixed or systematized until the question occasioned such formulation. This fact differentiates them from the spontaneous convictions already framed in the child's thought before the question called for their expression. The author gives us the precautions taken and the clues followed in determining to which type any particular answer belongs.

The first topic to which observation and questions are directed is the child's notion of thought. M. Piaget finds the same stages in development that he had noticed in the work on judgment. Roughly speaking, children under seven years of age represent one stage, children between seven and ten or eleven years a second stage, and children over eleven the third stage. To such questions as "Do you know what it means to think of something?" "Well, then, what is it you think with?"—children under seven give a purely materialistic answer. The answer usually given is that they think with the mouth. In the second stage, thinking is located in the head, but the instrument is breath, tubes. In the third stage, although the instrument is the voice in the head, there is the realization that the voice could not be seen or heard by anyone inside the head. Until the third stage of development is reached a name is not distinguished with certainty from the thing named.

[1] Reviewed in Vol. I, No. 4, pp. 504–505, and Vol. III, No. 12, pp. 551–554, of this *Journal*.

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With the name the child believes he is reaching the essence of the thing, the name is one of the thing's fundamental properties. A series of questions on how do names begin, where are names, do things know their names, can names be interchanged, all serve to bring out the child's realism. At first the name belongs to the thing, is in it, then it is said to come from man, but to be made for the thing; later it is regarded as due to the person who thinks about the thing. The realization that names are conventional and could be interchanged is not reached until about eleven years of age. Questions on dreams show that the child's conceptions of the nature of a dream follows the same general lines. Only gradually is the dream distinguished from reality. Even when the difference between a dream event and a real event has become clear, the dream itself is a real thing, which is in the room or on the wall much as pictures may be in a book. As the name is confused with the thing named, so the dream is confused with the thing dreamt of. Just as names are first in things and then in people's thoughts, so are dreams in the room and then in people's thoughts. M. Piaget regards the child as being without any consciousness of self in his early years. The child is far from being without subjective experiences, feeling, and desire, but he has not yet dissociated himself from the external world. He is in it and of it. He confuses reality and thought. This in the author's opinion lies behind children's magic.

M. Lévy-Bruhl used the word "participation" for the relation which, he says, primitive people believe to exist between objects and between persons and objects. They believe that objects are partially identical, or that one can directly influence another even when there is no evidence of physical connection. M. Piaget accepts this term, participation, and defines magic as "the use the individual believes he can make of participation to modify reality." Whether or not "magic" is in this sense a correct name for a child's conceptions is a point discussed in an appendix. Children's behaviour shows that they believe they can influence things by actions, such as counting or touching objects—in general by performing rites. They also believe that they can influence things by thought. "It often happens that children—for that matter adults too—think the opposite from what they want, as if reality made a point of foiling their desires." The child believes that he can influence one object by another, though he has no knowledge of any physical relation between them. He also believes that what he wills to happen may come to pass. This form of magic is closely bound up with the child's egocentricity. Until the child has differentiated himself from reality the realization of his wishes in the external world seems the natural sequence of events. There is thus close relation between the child's realism and his magic.

M. Piaget studies the other aspect of this same lack of differentiation, animism, which is, as it were, the obverse of realism. He endeavours to discover what objects the child regards as conscious, as "feeling" and "knowing." "Do the clouds feel?" "Do they know it is cold?" At first the child calls everything that is the seat of activity conscious, *e.g.* a button pulled off a coat is conscious. Later, only things that move are conscious. Then things which appear to move of their own accord, *e.g.* the sun, the wind. Finally, consciousness is restricted to the animal world. The investigation of what is "alive" furnishes a parallel series of stages, but a child who is at one stage in his conception of life may be at a different stage in his conception of consciousness. M. Piaget holds that there is a close connection between animism and magic. "The starting-point is a feeling of participation resulting from egocentricity, that is to say, from confusion between self

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and the world." The child endows things with purpose in order that they may fulfil their functions. He tries to connect things with "a purpose which is at the same time both an efficient cause and a justification of the effect with which he is concerned."

The last topic investigated is what is termed "Artificialism." This title in English seems misleading through its association with what is unreal or sham. A child's artificialism "consists in regarding things as the product of human action rather than in attributing creative activity to things themselves." Questions on the origin of the sun, the moon, clouds, rain, trees, mountains, reveal that at first the child thinks of these as being made, there is an artificer; later the material out of which they are made is viewed as partially responsible for the making. Later still a natural origin is assigned. Both animism and participation enter into the conceptions of origin. Thus, the sun is made by God or by a big man to be alive and to grow as we grow. It is the belief that everything is made for a purpose that leads the child to think of objects as made by an artificer and endowed with consciousness. "Animism and artificialism constitute two attitudes of mind which are complementary to each other." The child has no difficulty in conceiving things both as living and as being manufactured, since he has not yet differentiated "growing" from "being made." This is seen in his questions about babies. Interest in "how" things are made brings to light the difference between man's work and Nature's. From the two currents of artificialism and animism arise the cleavage of the material and the conscious aspects of living things. M. Piaget traces artificialism to the child's belief in the omnipotence of his parents. They are the great makers of his world, they can make everything. The author recognizes that in his investigations on this subject he has to detect and allow for the influence of religious instruction. He believes, however, that the deification of parents is more fundamental than any positive instruction about a Creator. "As man ceases to be a God in the child's eyes, and as Nature appears less to gravitate around us and our interests, the child seeks to explain things by means of themselves."

Whether the reader agrees or disagrees with the theories propounded in this book, he will not fail to be interested. The verbatim reports of the questions and answers furnish the psychologist with much material for reflection.

The book has suffered in translation. In many places the English is "unnatural," *e.g.* "mind . . . conscious of his own self," "tendencies . . . came to converge."

BEATRICE EDGELL.

Colour and Colour Theories. By CHRISTINE LADD-FRANKLIN. (London: Kegan Paul, Trench, Trübner & Co. 1929. Pp. xv + 287. Price 12s. 6d.)

The topic of this book is the Ladd-Franklin theory of colour. Ladd-Franklin supposes that the first response of a rod or cone to light is a purely chemical reaction. She postulates that a light sensitive "mother substance" in the rods and cones is decomposed by the action of light, and gives off cleavage products which arouse the vital activity of the rods and cones, and thus start nerve currents coursing towards the brain. In the "first stage," she supposes, a single big cleavage product, which we may call *W*, is split off by the action of light upon the mother substance, and the vital response to *W* is the sensation of white.

In the second stage, the mother substance is capable of giving off two smaller

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cleavage products, Y and B. Y is split off by the long waves of light, and B by the short waves, and the vital response to Y is the sensation of yellow, that to B the sensation of blue. But suppose that, chemically, $Y + B = W$, that is, $R + G + B = W$, then if Y and B are both split off at the same time in the same cone, they immediately unite into W, and the resulting sensation is white, and neither yellow nor blue.

Similarly in the third stage the mother substance is capable of giving off three cleavage products, R, G, and B, and there are three corresponding vital responses, the sensations of red, green, and blue. But, chemically, $R + G = Y$, and therefore if R and G are split off at the same time, they unite chemically as follows: $R + G = Y$, and $Y + B = W$; and therefore the resulting sensation is that of white.

The Editor states that Dr. Ladd-Franklin has been the first physiologist to consider colour always in the light of the development of the colour-sense. This is not the case. My theory of colour vision, which is an evolutionary one, was given several years before Ladd-Franklin wrote on colour vision. It will probably help the reader if the two be contrasted. I propounded that the first sensation was light, and that colour sensations became subsequently developed, the first colours to be seen being red and violet, corresponding to the rays which are physically most different in wave-length. We should now have an individual who would see the spectrum nearly all a uniform grey of different degrees of luminosity, but with a tinge of red at one end and a tinge of violet at the other. As the colour-sense developed it was not necessary that the rays should be so far apart before a difference was seen, so the two colours, red and violet, gradually encroached on the grey band until they met in the centre of the spectrum. A third colour then appeared, namely green; the colour-sense now assumed a trichromic form, red, green, and violet being seen in the spectrum. In the next stage a fourth colour, yellow, replaced the red-green of the trichromic, then in further stages blue, orange, and indigo were developed.

In my theory the visual purple is the visual substance, and that the rods are not percipient elements, but regulate the sensitiveness of the photo-chemical film by diffusing the visual purple into the liquid surrounding the cones, vision taking place through photo-chemical decomposition of the visual purple by light, thus setting up nerve impulses in the cones.

Ladd-Franklin is a strong advocate of the duplicity theory, which assumes that the rods are percipient elements in a faint light. Helmholtz and Nagel stated that there was no evidence that the rods were percipient elements. Apart from the numerous facts against the duplicity theory, it will be found that it is supported almost entirely by misstatements, namely: (1) that certain animals have only cones and others have only rods; (2) that the periphery of the retina is colour-blind; (3) that the eye is totally colour-blind in dark adaptation; (4) that the Purkinje phenomenon and the recurrent image are not found with the fovea. With regard to these I offer the following criticisms:—

1. Though I have examined numerous collections, I have never been able to find any animal with only rods or only cones, neither have I found anyone who has seen such a retina. The tortoise is the most quoted; it is stated to have only cones. The rods and cones in the retina of the tortoise are as clearly defined and distinct as in the human retina.

2. The periphery of the retina is not colour-blind when colours of sufficient intensity are used. The reader can test this for himself with a doctor's red lamp. He will find he can see it as red to the extreme periphery.

3. In dark adaptation the eye is not totally colour-blind. Further, there

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is no scotoma or blind area corresponding to the rod-free portion of the macula, which is equal to a visual angle of about three degrees.

4. The Purkinje phenomena and recurrent image are found with the fovea. Hess showed not only that the recurrent image was found with the fovea, but also that it was bent outwards at this region as it would be if the visual purple had to flow into the fovea.

Sufficient attention has not been paid to subjective experiments. It is forgotten that all our sensations are subjective. The duplicity theory entirely fails to explain the change in position in the field of vision of after-images on movement of the eye. Two after-images may combine into one, or a red after-image may go right through a green one. This proves conclusively that the stimulus is liquid. See the very able paper by Ferree on this point. Hartridge is quoted as stating that the Young-Helmholtz theory explains the facts of colour-matching and of complementary colours as well as that of Ladd-Franklin, and that in the case of colour-blindness neither of the theories explains anything.

The facts of colour-blindness are so inconsistent with the old theories that it has been extraordinarily difficult to get them recognized. For instance, it took me twenty-five years to establish the fact that colour-blind people can get through the wool test, though 50 per cent: of the dangerously colour-blind can pass this test even with the use of five test colours (see statistics of Board of Trade). No attempt has been made to explain this fact. The large class of the trichromic, who see only three colours in the spectrum, red, green, and violet, yellow being seen as red-green, is not mentioned. If all mankind were like this, there would be no such colour as yellow. Defects of light perception should be distinguished from defects of colour discrimination. For instance, a man with good colour discrimination may have shortening of the red end of the spectrum and fail to see a blazing red light when it consists only of the waves in the shortened portion (see report of British Association Committee, 1927).

Ladd-Franklin assumes that the colour of the dichromic at the red end is yellow. This has not been so with the cases I have examined. The colours seen have been red and violet in monocular cases and cases of temporary colour-blindness. There are many dichromics bordering on the trichromics, who in favourable circumstances see three colours, red, green, and violet, and in ordinary circumstances, red and violet. In cases where yellow is much the brightest, as, for instance, in the spectrum, it may be chosen.

Ladd-Franklin quotes Pole as an example, but Pole writes as follows: "The full red by gaslight is to me a most superb colour. Dalton could never bring himself to believe it was really a yellow sensation. I have heard other colour-blind persons declare it to be a red which only appears in that way; and although I myself cannot detect any new colour-sensation in it, I am obliged to admit that, as yellow, it is extraordinarily saturated and powerful." When red and yellow are made of equal luminosity, the red is selected as the representative colour.

F. W. EDRIDGE-GREEN.

The Guidance of Conduct. By EDWARD T. DIXON. Psyche Monographs, No. 2. (London: Kegan Paul, Trench, Trübner & Co., Ltd. 1928. Pp. 219. Price 10s. 6d. net.)

This is an interesting and stimulating, indeed, a challenging book. "It is, I think, pretty generally agreed that philosophy has failed to solve the

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problem of what *Dinge an sich* really ARE; but it will be a notable advance if it comes to be pretty generally agreed that this existential problem is not the thing that matters; that we are on the wrong tack if we simply try to 'make to ourselves pictures'; that what really matters is what things DO; first of all what they DO to ME, or, conversely, what I can DO to THEM."

From the quotation it will be appreciated that Mr. Dixon's *Guidance of Conduct* deserves close attention if only for, though certainly not only because of, his stressing of the distinction between the barren formulæ of 'pictures made to ourselves,' of which knowledge may indeed consist, and the significance of formulæ as guides to the conduct of life, in which lies true wisdom. A whole philosophy is implied in the shift of emphasis from cognition to conation; and this not only from the purely practical, but from the theoretical point of view also. The roots of the distinction, which originates in direct psychological observation, thrive not only in that soil; they spread out into epistemology and penetrate deep into ontology as well.

The volume consists of an Introduction and nine chapters, all of the nature of essays, and seemingly to a large extent independent essays. Indeed, the author alludes to them in his Preface as a "series of articles" now "published in book form." But there is a continuous thread running through them all, the initial knot of which is tied in the chapter "On the Distinction between Real and Verbal Propositions," a chapter which originally appeared in *Mind* so far back as 1893. As an instance of the application of the view developed in this chapter, reference may be made to the consideration of the famous formula "survival of the fittest" in the chapter "On the Conception of Value." This formula, when first enunciated, provoked enormous controversy, largely, if not wholly, as Mr. Dixon shows, because of misunderstanding; for the formula in question is either a truism (purely symbolic) or else an important truth; in which case it must mean more than that those organisms do in fact survive which are able to survive. "Neither of the parties to the great controversy," he writes, "really took Darwin's formula as a truism; the theologians, indeed, took it almost as a blasphemy; but the opposite party certainly accepted it as an important truth, even if they regarded it as one which might be arrived at independently of experience, as an 'axiom.' But the strange thing about the controversy is this: the men of science and philosophers of the deterministic school welcomed Darwin's formula because they hastily assumed that it would dispense with the conception of Purpose, or the interference of Free Will in the Universe, not realizing that it could do so only if it was reduced to a truism, a pure symbolic proposition, implied by the definition of 'fittest'; while, on the other hand, it was a long time before it occurred to the theologians, if indeed it has occurred to any of them at all, that by reducing the formula to a truism they might accept it without any contradiction of their theological dogmas."

There is a second thread, or rather an elaboration of this, running through the essays of the volume, though not explicitly developed in it, of great moment in the thought of the author. This is his "Symbolic Theory of Order," an exposition of which is promised in his *A Natural Philosophy* shortly to be published. The symbolic theory requires, in the ordering of items, only that they be related "on the basis of arbitrary definitions of technical terms." The items can be read in any direction, backwards or forwards, up or down, left to right, or right to left, indifferently. But the theory is concerned with verbal definitions alone; and there are "explanations by which we seek to give real import to the symbolic theory." Not only are such distinctions as that between the Self and the not-Self real as are the items distinguished. There are also real distinctions, as in the case of time and of

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values, such as 'past to future' and 'aversion to desire.' We cannot read these backwards or forwards, but only in one direction. They are 'one-way' distinctions which must be read as stated and not as, *e.g.*, 'between past and future,' or 'between aversion and desire.' And these 'one-way' distinctions are additions fundamental to Mr. Dixon's purely symbolic theory. Here the 'one-way' "sense in which we pass the elements of the picture in review, as a formula" is "of real importance." "I do not merely distinguish between a desire and an aversion; I *prefer* the former; and our explanation of the universe would break down from the very foundation if it did not include this conception of preference . . ."; just as it would break down if we indifferently substituted the past for the future.

Mr. Dixon believes that the recognition of the 'one-way-ness' of values, to speak only of these, as fundamental to philosophy would constitute an immense step in advance; "only it is not impossible that as soon as it is perceived that this recognition means pragmatism, the forces of orthodoxy will be arrayed against it." That may be so; but no one need stop short at a pragmatic criterion, or hold that an orectic basis of interpretation excludes a finally realistic one. And orthodoxy would be hard pushed to show that we can know of "things" directly anything else than what they do to us and what we can do to them.

Once more, the emphasis upon conation—and Mr. Dixon is not alone in bringing it to bear upon the problems of philosophy—is significant and noteworthy; and *The Guidance of Conduct* is a book to be read with profit and with enjoyment by those who differ from him as well as those who share his views.

F. AVELING.

Fundamentals of Objective Psychology. By JOHN FREDERICK DASHIELL. (London: George Allen & Unwin Ltd. 1929. Pp. xviii + 588. Price 16s. net.)

As indicated by its title, Professor Dashiell's volume belongs to the growing library of behaviouristic literature. Not only does the author find the whole explanatory foundation for Psychology in "facts and speculations based upon neural physiology" (as he claims, indeed, that even the most extreme subjectivists do); but he also adopts the heuristic method of Behaviourism as providing the most scientific approach to the subject. While not antagonistic, as he says, "to the employment of an introspective approach where the teacher wishes to supply it, . . . where the processes involved are especially subtle and intricate," as in thinking and attending, the volume is consistently planned on the physiological lines already familiar to students of previous behaviouristic writings. A very considerable part of it, accordingly, is occupied with the physical mechanisms and determinants of overt behaviour, glands, brain, central and autonomic systems, and the like. Conditioned reflexes are given full scope for purposes of explanation; and, indeed, human behaviour in all its aspects, whether overt or not, "turns out to be a story of sensori-motor arcs." This, of course, is quite a permissible view; but Dashiell's book must share the criticism levelled against other presentations of the same outlook, that it is not Psychology, even though it may be a legitimate objective study of individuals who happen to be conscious.

As a beginner's textbook, the matter is well selected and arranged and attractively presented. Special prominence is given to recent experimental work, and the more academic parts of the text are copiously illustrated in a thoroughly 'popular' way. It should grip and hold the attention of the young student. Useful summaries are appended to some of the chapters, and good bibliographies are provided for each topic treated.

F. AVELING.

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Received also:—

D. D. VADEKAR, M.A. *Bhagavadgita. A Fresh Study*. Poona: The Oriental Book Agency. 1928. Pp. xv + 100.

Hegel: Selections. Edited by J. Loewenberg. London: Charles Scribner's Sons. 1929. Pp. xliii + 468. 3s. 6d.

Plato: Selections. Edited by Raphael Demos. London: Charles Scribner's Sons. 1929. Pp. xxxviii + 448. 3s. 6d.

HENRY S. MACRAN. *Hegel's Logic of World and Idea*. Oxford: Clarendon Press: Humphrey Milford. 1929. Pp. 215. 12s. 6d.

KHAJA KHAN. *Wisdom of the Prophets*. Madras: The Hogarth Press. 1929. Pp. xl + 202. 2s.

G. T. W. PATRICK, Ph.D. *What is the Mind?* New York and London: The Macmillan Company. 1929. Pp. viii + 185. 10s. 6d.

T. L. VASWANI. *Atmagnan: or Life in the Spirit*. Madras: Ganesh & Co. 1922. Pp. vi + 95. Re. 1–8.

GEORG STIELER. *Person und Masse*. Leipzig: Felix Meiner. 1929. Pp 239. Preis broschiert 11 RM, gebunden 13 RM.

WILLIAM BROWN, M.A., M.D., D.Sc. *Science and Personality*. Foreword by Sir Oliver Lodge. London: Oxford University Press: Humphrey Milford. 1929. Pp. viii + 258. 12s. 6d.

ALEXANDER HERZBERG. *The Psychology of Philosophers*. (International Library of Psychology and Philosophy.) London: Kegan Paul, Trench, Trübner & Co. 1929. Pp. x + 228. 10s. 6d.

JOSEPH HERSCHEL COFFIN, Ph.D. *The Soul Comes Back*. New York: The Macmillan Company. 1929. Pp. 207. 8s. 6d.

P. J. HARWOOD. *A Theory of the Solar System*. Part II. Ovingdean: Published by the Author. 1928. Pp. 63. 5s.

D. VENKATRAMIAH, B.A., L.T. *Kathakopanishad*. (Sanskrit text, with English Metrical Version, Explanatory Notes and Glossary.) Madras & London: Macmillan & Co. 1928. Pp. viii + 67.

LOUIS F. ANDERSON. *Das Logische Seine Gesetze und Kategorien*. Leipzig: Felix Meiner. 1929. Pp. 97. 3 RM.

LOUIS F. ANDERSON. *Die Seele und Das Gewissen*. Leipzig: Felix Meiner. 1929. Pp. 91.

HERMANN COHEN. *Religion der Vernunft aus den Quellen des Judentums*. Frankfurt am Main: J. Kauffmann. 1929. Pp. 629. Preis br. Mk. 18; Geb. Mk. 20.

DANIEL SOMMER ROBINSON. *An Anthology of Recent Philosophy*. New York: Thomas Y. Crowell Company. 1929. Pp. xi + 674. 4 dollars.

JUNE E. DOWNEY. *Creative Imagination. Studies in the Psychology of Literature*. (International Library of Psychology & Philosophy.) London: Kegan Paul, Trench, Trübner & Co. 1929. Pp. viii + 230. 10s. 6d.

The Tree of Life. An anthology by Vivian de Sola Pinto and George Neill Wright. London: Constable & Co. 1929. 8s. 6d.

HUGO BERGMANN. *Der Kampf um das Kausalgesetz in der jungsten Physik*. Braunschweig: Friedr. Vieweg & Sohn. 1929. Pp. x + 78. RM. 4.50.

F. S. MARVIN and A. F. CLUTTON-BROCK. *Art and Civilization*. London: (Unity Series VIII): Oxford University Press: Humphrey Milford. 1929. Pp. 263. 12s. 6d.

WILLIAM MCDOUGALL, M.B., F.R.S. *Modern Materialism and Emergent Evolution*. London: Methuen & Co. 1929. Pp. xi + 295. 7s. 6d.

CASSIUS JACKSON KEYSER. *Pastures of Wonder, The Realm of Mathematics and the Realm of Science*. New York: Columbia University Press. 1929 Pp. xii + 208. 2 dollars 75.

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BERKELEY. *Essay, Principles, Dialogues, with selections from other writings.* Edited by Mary Whiton Calkins. London: Charles Scribner's Sons. 1929. Pp. lvi + 480. 3s. 6d.

ROBERT LATTA, M.A., D.Phil., LL.D., and ALEXANDER MACBEATH, M.A. *The Elements of Logic.* London: Macmillan & Co. 1929. Pp. viii + 393. 6s.

J. E. SALOMA. *The Category of Religion.* Helsinki, Finland: Suomal. Kirjall. Seuran Kirjap. Oy. 1929. Pp. 189.

W. T. STACE. *The Meaning of Beauty. A Theory of Æsthetics.* London: The Cayme Press Ltd. 1929. Pp. 255. 6s.

ADRIAN COATES, M.A. *A Sceptical Examination of Contemporary British Philosophy.* London: Brentano's. 1929. Pp. 256. 10s.

R. D. RANADE, M.A. *Aristotle's Criticism of the Ecleatics.* Poona: Aryabhushan Press. 1927. Pp. 199.

R. D. RANADE, M.A. *Herakleitos* (third edition). Poona: Aryabhushan Press. 1926. Pp. 16.

J. S. HALDANE, C.H., M.D., F.R.S. *The Sciences and Philosophy* (Gifford Lectures, 1927–28). London: Hodder & Stoughton, Ltd. 1929. Pp. ix + 344. 15s.

G. F. STOUT, M.A., LL.D. *Manual of Psychology.* Fourth edition. (Revised by C. A. Mace.) London: University Tutorial Press. 1929. Pp. xix + 680. 12s. 6d.

JOHN DEWEY. *Experience and Nature.* London: G. Allen & Unwin Ltd. 1929. Pp. ix + 433. 12s. 6d.

A. L. REYS. *God and His Attributes.* London: Burns, Oates & Washbourne, Ltd. 1929. Pp. 90.

EZEQUIEL A. CHAVEZ, Dr.H.C.U.N. De M. *Ensayo de Psicologia de la Adolescencia.* Mexico: Editorial "Cultura." 1928. Pp. 480.

CHARLES S. MYERS, C.B.E., F.R.S. *Psychological Conceptions in Other Sciences.* (Herbert Spencer Lecture, 1929). Oxford Clarendon Press: Humphrey Milford. 1929. Pp. 24.

JOHN S. MACKENZIE, LITT.D., LL.D. *Outlines of Metaphysics.* (Third edition revised.) London: Macmillan & Co. 1929. Pp. xiii. + 184. 5s.

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CORRESPONDENCE

To the Editor of the *Journal of Philosophical Studies.*

THE CASE FOR EMERGENT EVOLUTION.

Sir,

Mr. H. Wallis Chapman's letter (*Journal*, vol. iv, p. 286) should receive the attention it deserves. The more thoroughly such questions as he raises are considered in intimate detail the better.

With respect to his pertinent comments on the order of nature, they may well serve as a basis of further discussion, say under the text of Dr. Broad's statement: "On the emergent theory . . . there would be two fundamentally different types of law which might be called 'intra-ordinal' and 'trans-ordinal' respectively" (*Mind and its Place in Nature*, p. 77). But I question whether a further expression of opinion on my part would carry any weight. One whose schooling in logic is long out of date should yield place to far more highly trained specialists.

Whatever the phrase may have then meant, I was taught in my youth that there is one "order of nature," for ever on the go, with strict uniformity in the course of events. This I still accept as a sound maxim of good policy in the conduct of inquiry. But I ask: Does this sweeping generalization hold in *all* respects, or in some respects only? If in some respects only, then in other respects the order of nature may be that of a world still in the making. It is in these other respects, and these only, that emergent evolution finds its province of inquiry. And what these other respects are, if such there be, can only be disclosed under prolonged and careful sifting of all the available evidence.

It goes without saying that it may some day be shown that there are no "other respects." The sweeping generalization may turn out to be true in all respects. If so, so be it. To-day, however, the hypothesis of emergence may be not unworthy of critical consideration.

But some critics—your correspondent is not among them—fail to realize that, frankly and avowedly, emergent evolution deals only with these other respects. In all cases we have to reckon also with the realm of not-emergent evolution. This not-emergent realm is that of the deducible—of the predictable before the event. In this respect, if I may so put it, the game that is played by all going concerns is the same game with one set of rules of the game. And these rules hold good whenever and wherever it is played. I take it that, broadly speaking, the whole space-time game, *as such* (or in this respect), is played under rules that are for ever, and throughout the universe, the same. And I take it that, so far as a strictly mechanical interpretation holds with respect to composite "particles," giant or invisibly pigmy, the game and the rules of the game are not-emergent. Emergent evolution, in these respects, does not come into the picture. We keep within the realm of the deducible.

According to the emergent hypothesis, however, there are some games—conspicuously the game of life so far as we yet know—which, from the evolutionary point of view, may be such that there seem to come on to the scene quite new rules of the game which can only be learnt through experiment and observation when the game is already in play. If this be so, the question in any given instance is: In what respects, if any, are there new rules in the game that is in play? This question Mr. Chapman asks with special reference to the vapour-game, the liquid-game, and the solid-game.

He here confines himself to "emergents in respect only of their spatio-temporal qualities," quoting this ambiguously elliptical expression from me. What I ought to have said is "emergents in respect only of the spatio-temporal qualities which are co-related with them," or something perhaps still more cumbrous.

With regard, then, to these co-related spatio-temporal characters, Mr. Chapman

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adduces the Van der Waals' equation, which "was devised to represent the behaviour of substances in a state of vapour, but was then found to express the change from the gaseous to the liquid state." And he suggests further developments in terms of "stable oscillations about the points of a space-lattice" which "would express the passage from liquid to crystal."

This is admirably to the point. I hope that it may open up further discussion. But would a contribution to such further discussion on my part be of any value? It is surely a matter for experts well up to date in physics and in the logic of the deducible.

There I might leave it. Lest, however, this should seem discourteous to your correspondent, or be taken as canny evasion of a pertinent issue, I will add just a little.

The question, as I read it, is whether in passing from vapour to liquid, and from liquid to solid, in this or in reversed order, *all* that happens is deducible, or *something* that happens escapes the close meshwork of deduction. It is for the expert to say. He can tell us the rules of the game expressed in suitable equations. No doubt there are rules common to all three games. Does this imply that there are *no* rules distinctive of each of them? If it be said that there is nothing *emergently* distinctive, what does this mean? It means, I think, that given all the rules of any one game, all the rules of the other two games (as they are actually played in existent nature) are simply matters of logical deduction on the part of one who is suitably trained for this task.

Let us then suppose that in some corner of the universe the order of evolution was first vapour, then liquid, then solid. Let us also suppose that some imaginary person, adequately trained, lived in the precedent vapour-epoch and knew all the rules of this game. Then he could foretell *all* the rules of the liquid-game, and *all* the rules of the solid-game, though neither of these subsequent games were yet in play in his corner of the universe. They would be the actual rules in the existent world, not only such rules as were logically possible.

I do not say that he could not do so. I only ask: Could he do so? It is for the expert to tell us whether, in this province of inquiry, there are what Mr. Broad calls "trans-ordinal laws" or not.

With brief reference to the life-game, Mr. Chapman reminds us that Professor Boycott finds it "hard to say where the term 'living' becomes appropriate and where it ceases to be so." Many others are in like case. Experts along different lines of inquiry seek an answer to the question: Of what nature were the evolutionary precursors of unicellular organisms? Who can say, since we do not know the world-conditions under which these precursors in some way came into being? We can only conduct investigations under the conditions which are found, or which may be imposed, here and now. Along one line of approach here and now we are faced with the "virus-problem." It is highly technical—essentially a problem in which only expert opinion carries much weight. The present position, so far as an interested outside can gather, is in brief this: Some "filter-passers" are living; some may be not-living. Along this line of inquiry one does not seem yet to be within sight of an answer to the question: Are all the rules of the living-game deducible from those of the not-living game? In other words, "Emergent or not-emergent?" remains an open question.

Yours faithfully,

C. LLOYD MORGAN.

ST. LEONARDS-ON-SEA.

TO THE EDITOR OF THE *Journal of Philosophical Studies*.

OPERA HACTENUS INEDITA ROGERI BACONI.

SIR,

I find it a little difficult to characterize adequately the temerity of Professor A. E. Taylor's excursions into intuitive palæography. Anyone who thinks that the contraction for *cum* is *cm* and for *tamen* is *tm* is surely debarred from writing on the matter at all. Whatever *cm* may stand for—and palæography is full of snags—

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one thing it never means is *cum*; and though *tm* stood for *tamen* up to the ninth century, after the change of hand it is restricted to *tantum*. No wonder he finds a long list of errors in Fr. Delorme's text. It is perhaps a little unusual for one who has never edited a mediæval text from the manuscripts to put on paper a suggestion that a scholar who has devoted his whole life to the publication of thirteenth and fourteenth century texts—many of them for the first time—cannot read a manuscript, and to say what that manuscript, which the critic has never seen, contains. Professor Taylor's suggestions of its content have no foundation. 113.34 'esse divini' is written in full. 249.16 'superiora' is in the manuscript.

Since this is not the first time that Professor Taylor has commented, equally rashly, on the text of these fascicules, may I be allowed to inform him that "edidit" is not the Latin for "critically edited," for which there is a well-known formula. The object of this publication, as has been repeatedly said, is to let students know what is in the manuscript, and this has been done in every case. Fr. Delorme and I, with the kind assistance of some distinguished scholars, have spared no pains to this end, and we welcome any criticism which will help to elucidate the thought of Bacon. We do not and cannot object to any criticism of our editorial methods.

ROBERT STEELE.

SAVAGE CLUB,
W.C.

TO THE EDITOR OF THE *Journal of Philosophical Studies*.

PROFESSOR TAYLOR'S REPLY.

SIR,

I have already acknowledged my mistake about the *origin* of the readings *esse divini* and *superiora*, and expressed my regret for it. That the words are corrupt—though *superiora* may be a corruption of *superiorum*, not as I suggested of *signorum*—I am prepared to show when anyone will defend them. For the rest, Mr. Steele himself makes no reply to my remarks about confusions of *materia* with *natura*, and the omission of necessary negatives. As to his charge of ignorance, it is partly based on an oversight. The abbreviation of *tamen* which I had in mind was *tn*. There remains the complaint that I had thought *cum* might in a certain place be written *cm*. I made this remark in the belief that I had recently seen the word written so in a careful transcript of a MS. apparently of rather later date than the Amiens MS. of Bacon's *Questiones*. It is only too possible that my memory was in fault; but whether the fault calls for the hard words Mr. Steele uses I must leave it to others to judge.

Yours faithfully,
A. E. TAYLOR.

EDINBURGH,
June 5, 1929.

OBITUARY NOTICE

At the moment of going to Press, the sad news has reached us of the sudden death of the distinguished and beloved Chairman of the Institute, Professor Leonard Trelawney Hobhouse. An account of his life and work will appear in a subsequent issue.

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INSTITUTE NOTES

The Annual General Meeting of the Institute will be held at the Royal Society of Arts, 18 John Street, Adelphi, London, W.C.2 on either the 25th or 26th of July, 1929, at 5.30 p.m. Sir Oliver Lodge, D.Sc., LL.D., F.R.S., will deliver an address, entitled "Beyond Physics."

Tea will be served from 4.45 to 5.15 p.m.

The syllabus for the Session 1929–30 is in course of preparation, and copies will be sent to all members in due course.

During the Session 1928–29, which ended on June 28th, two courses of lectures were given in London by Professor Leonard Russell, one in the Michaelmas term, entitled "Four Great Philosophers and the Modern Outlook," and one in the Lent term, entitled "Civilization and Spiritual Life."

At the Evening Meetings Dr. Morris Ginsberg spoke on "Race and Civilization," Mr. S. K. Ratcliffe on "The Impact of America on Western Civilization," Mr. Roger Fry on "Representation in Art," Miss L. Susan Stebbing on "Is 'Good' Objective?", Mr. R. G. Collingwood on "Form and Content in Art," Sir Henry Slesser and Mr. C. Delisle Burns on "Church and State in Western Civilization."

NORTH WALES CENTRE.

The Centre contains at the close of its first Session twenty-three members of the Institute, while a considerable number of other persons have taken advantage of its meetings. The work of the Centre takes three main forms: (*a*) Public meetings addressed by distinguished visitors; (*b*) General meetings at which a paper read by a member of the Centre or by a visitor is followed by a discussion; (*c*) Groups meeting periodically to discuss a special topic, with a specified book or books as a basis for discussion.

The following is the programme carried out in each category during the past Session:—

(*a*) Inaugural Public Meeting on November 2, 1928, at which Professor Leonard S. Russell, of the University of Birmingham, delivered an address on *Reality : Science and the Artist.*

(*b*) The Rev. E. E. Thomas, D.Litt., on *The Relation between Fact and Interpretation in History, with special reference to the Historical Basis of Religion* (November 1, 1928).

Mr. A. K. Stout, M.A., on *Error* (February 15, 1929).

Professor G. F. Stout, of St. Andrew's University, on *Philosophy, Science, and Common Sense* (March 14, 1929).

(*c*) Two groups have met regularly throughout the Session, one on *Æsthetics* (using Collingwood's *A Philosophy of Art*, and Carritt's *The Theory of Beauty*), the other to discuss J. S. Haldane's *Mechanism, Life and Personality.*

The Committee is arranging for next Session a full programme along the same lines.

A. K. Stout, *Hon. Sec. and Treas.*

THE NORTHUMBERLAND AND DURHAM CENTRE.

Members of the Centre met regularly each month from October till May. The members attended loyally, and entered with active interest into the discussions, but we regret that we have not succeeded in adding greatly to our numbers.

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The opening meeting of the Session was addressed by Dr. Drever, who read a paper on *Instinct*, and this was so much appreciated that the second meeting was devoted to talking out some of the points raised by Dr. Drever. Discussions have also taken place on "Social Psychology," "Philosophers and Psycho-analysis," "The Psychology of Character," and "Thought and Language." We were deeply indebted to the Professor of English Literature at Armstrong College, Professor W. L. Renwick, for a most stimulating paper on "Form in Art."

Although our discussions have been interesting, we feel a need for greater continuity in our work, and we have therefore decided to make Religion our subject of study next Session, and to consider it from different points of view. We are hoping that some well-known philosopher may be induced to come to Newcastle in October or November to address an open meeting on some aspect of the problem of Religion.

We have to record our regret that our Chairman, Professor F. B. Jevons, who founded the Centre, has been unable for reasons of health to attend our meetings. We are grateful to Professor J. L. Harvey for acting as Vice-Chairman.

J. E. Alderson, *Hon. Secretary.*

CARDIFF CENTRE.

On Thursday, May 9th, there was held a meeting of the Committee of the local Centre of the Institute, in which some review was made of the work of the preceding Session, and steps taken for arranging the programme of next winter's studies.

The Committee report a total studentship roll of seventy-seven; of these, fifty-seven had enrolled as following Professor Scott's course of lectures on *The Ethical, the Social, and the Economic Order*; and forty-nine as following my course on *Artistic Vision and Philosophic Reflection in the Nineteenth Century*.

A general meeting of the local Centre is to be held on June 12th, with a view to confirm the suggestions made by the Committee for the programme of 1929–30. Meantime the Committee have requested Professor Scott to lecture on the more purely philosophical side of his subject of 1928–29. They have also asked me to develop the thesis of my lectures, and I have suggested that some commentary on Spengler's *Decline of the West* would be the natural line of development, while it would also relate my subject to contemporary thinking.

After the General Meeting of June 12th Mr. A. O. Appleton, Supervising Officer of the B.B.C. at Cardiff, will give an address on broadcasting. Mr. Appleton is interested in Æsthetic Theory. Hence there is peculiar relevance in his addressing the members of the branch personally.

John M. Thorburn.

LIVERPOOL CENTRE.

In connection with the Institute's work here, we arranged two courses of lectures during the Session 1928-29—one before and the other after Christmas. The first course "A" was on *The Philosophy of Religion*, by Dr. J. E. Turner; the second course "B" was entitled *Our Knowledge of the External World*, by Dr. L. Arnaud Reid. In both courses interest, as evidenced by discussion, were very keen indeed.

J. E. Storey, *Hon. Secretary.*

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JOURNAL OF
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EDITORIAL

IN the first article of the current number an account of the life and work of the late Professor Hobhouse is given by Dr. Ginsberg, who for many years was closely associated with him as pupil and colleague. Readers of this article, even if unfamiliar with his books, cannot fail to be impressed by the breadth and depth of Hobhouse's philosophical achievements. A pioneer of Comparative Psychology, an anthropologist of wide learning, the founder of a scientific sociology, an ethical worker of originality and distinction, and a metaphysician who attempted with marked success an imposing synthesis of the results of his scientific and philosophical studies! As a man he was equally remarkable, inspiring in his pupils or as social leader love and reverence by the nobility of his thought and utterance, his passion for justice, and his wise and tender humanity. Whilst holding the office of first Chairman of the Institute, he gave his great gifts, influence and time ungrudgingly in its service. Truly all who have been honoured by his friendship or associated with him in his academic or social work will cherish his memory with gratitude.

It is, therefore, with enthusiasm that we call the attention of our readers to the announcement of a proposed memorial to the late Professor Hobhouse (p. 547). We feel sure that many who, directly or indirectly, have come into contact with his work will wish to take part in the establishment of a Memorial Fund to perpetuate the memory and influence of a great man.

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LEONARD TRELAWNY HOBHOUSE

MORRIS GINSBERG, M.A., D.Litt.

The sudden death of Professor Hobhouse on June 21, at the age of sixty-four years, at Alençon, Normandy, is a heavy loss to science and philosophy. He combined in a rare degree great powers of metaphysical speculation and synthesis with capacity for painstaking and detailed research in many fields of empirical science. He was one of the pioneers of comparative psychology; he developed a technique of the greatest value in the handling of the vast and chaotic data of anthropology; he laid the foundations of a scientific sociology; and he has attempted a synthesis of the results of his scientific and philosophical studies on a scale which must win for him a high place among the systematic thinkers of the world. As a teacher and a social leader he inspired love and reverence by the nobility of his thought and utterance, his passion for justice, his wise and tender humanity. Members of the Philosophical Institute have special cause to mourn his loss. When the Institute was founded in 1925, it was the unanimous wish of all connected with its foundation that Professor Hobhouse should be its chairman; and it has been a great piece of good fortune for the Institute to have had the benefit of his ripe wisdom and extensive experience during the first five years of its life.

An adequate account of Hobhouse's work would require a substantial volume. Here only the barest outline can be attempted. Fortunately there is a thread of unity running through all his work, illustrating in a happy manner his own view of reason as an effort towards integration, growing in articulateness and comprehensiveness. It begins with an epistemological inquiry into the nature of rationality, proceeds to empirical investigations into the working of mind in the organic world and in human societies, thence to ethical theory and sociology, and returns to metaphysics in a final effort at a comprehensive synthesis. Our task here will be greatly facilitated by following his own order of treatment.

(*a*) *Theory of Knowledge.*[1]—Hobhouse's theory of knowledge is based on a principle closely similar to that which was elaborated by the idealists of the British School, namely, that the truth is the whole, and that the proof or explanation of the part is to be found in its relation to the whole. This, which may be called the organic view of rationality, is combined by Hobhouse with an evolutionary

[1] *Theory of Knowledge*, 1896.

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account of the growth of mind. Human thought is regarded as an organic structure held together by the mutual support of its parts, undergoing correlated change as it develops, but maintaining a recognizable identity through modification. It will be useful to bring out the implications of this view a little more in detail.

1. If knowledge is truly organic, there is a mutual connection between all its parts, and it cannot therefore rest on a body of unchanging first principles supposed to be their own guarantee. First principles, like all other elements of knowledge, depend for their ultimate validity upon mutual consilience and mutual necessitation in a systematic whole growing in coherence and comprehensiveness. Felt certainty and the feeling of immediacy are psychologically conditioned and an insufficient criterion of truth.

2. Scientific thought is therefore not merely a deductive process, in the sense of being confined to a body of judgments rigidly deducible from first principles, supposed to be intuitively given and above criticism, or as more recent upholders of the deductive view of science would say, hypothetically assumed. Such a view makes it impossible to bring the body of science conceived as a self-consistent system of truth into relation with truth regarded as a correspondence of judgment with reality. Nor is science purely descriptive, that is confined to the analysis and synthesis of observation. Rather is it a growing body of tentative generalizations, going beyond actual observation, tested by their coherence and consilience, and moving towards ever greater systematization, whereby the probability of all the connected elements, as modified by their interconnection, is progressively increased without reaching certainty.

3. If Hobhouse agrees with the idealists in stressing the point that truth is in the whole, he is more eager than they to emphasize another implication of the organic principle, namely, that the explanation of the whole is to be sought in the interrelation of the parts. This is the realistic element in Hobhouse's theory of knowledge. Each judgment that enters into the system of knowledge must, so to speak, stand on its own legs, though it may support and be supported by other judgments. Each categorical judgment, moreover, asserts a reality independent of the act of judging or asserting. In this respect Hobhouse may be regarded as one of the founders of modern epistemological realism. He has, however, no sympathy with those forms of realism which tend to reduce the cognitive function to a minimum or regard it merely as a conational direction of the mind upon things. If he denies that *esse* is *percipi*, he denies equally that *percipi* is *esse*. If he refuses to reduce the object to a mode of knowing, he also refuses to reduce knowing to a mode of the object. In short, the reality of the self as well as of

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the not-self is vindicated, and it is argued that the conception of the self is experientially valid, being built up by the same processes which go to the making of any other valid conception.

From this brief sketch of the foundations of Hobhouse's epistemology we may pass to his special studies. He is essentially a philosopher of evolution, the key to which he finds in the notion of correlation. By correlation he understands the bringing of elements into relation with one another or of all to a whole. Put in this form the notion is very abstract, but when applied to the different fields of knowledge, it becomes in Hobhouse's hands fertile and suggestive. He uses it in the first place in his theory of mental evolution, secondly in his ethical theory, and thirdly in his metaphysical view of reality.

(*b*) *Mental Evolution.*[1]—Hobhouse's psychology has many affinities with what is now called the 'hormic' point of view. He insists, with the supporters of this view, that mind is dynamic and has causal efficacy; but he avoids the animistic tinge which is characteristic of some forms of the hormic theory. The categories with which he works are not those of body and mind, but of mechanism and teleology. Experience reveals, he argues, three types of system which he designates mechanical, organic, and teleological. A whole acts mechanically when its parts act uniformly as a result of forces immediately impinging on each of them and in a manner which is in principle indifferent to the results of their action or to the state of other parts. A whole acts organically when the operation of the parts is varied in accordance with the requirements of the whole as a self-maintaining structure. A whole acts teleologically when its acts are determined by their own tendency to produce results affecting the whole. The mechanical and teleological modes of behaviour are, in his view, irreducible to a common category, but the organic may be explained in terms of mechanism as qualified by teleological factors. In other words, the various forms of organic life may be interpreted as variations in the interplay between the principles of purposive mutuality and relative indifference or independence of parts. Body and mind are not to be conceived as two substances. The psycho-physical organism is a whole in which mechanical modes of action are qualified by teleological ones. Bearing these general considerations in mind, Hobhouse's chief conclusions in the field of comparative psychology may perhaps be briefly put thus:—

1. Conation, or action determined by its relation to the results arising from it, is shown to be probably co-extensive with animal, if not with all life.

2. A series of stages, or what might appropriately be called

[1] *Mind in Evolution*, 1901. Third edition, 1926.

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conational levels, is worked out, tracing the general lines of mental evolution from the groping of unconscious effort to articulate purpose. The nature of these stages, which are derived from an analysis of mature experience and from observation of the varied forms of behaviour in the animal world, cannot here be traced in detail. Broadly, Hobhouse shows that the essential function of mind is correlation, that is the relating of elements of experience to one another and to the requirements of the wholes of which they form part. Mental development is a process whereby (*a*) the factors correlated become increasingly conscious, and (*b*) the scope of correlation or the extent of the sphere comprehended widens. Thus in sensori-motor action we have an adaptation of behaviour to varying stimuli, and there is a correlation of co-present sense data. In instinctive behaviour there is a correlation of reflex and sensori-motor acts, by a persistent feeling tone determined by hereditary structure and guiding trains of acts towards ends of racial service. Next, with the growth of individual and social experience, correlation becomes more articulate, the ends of behaviour enter more and more fully into consciousness, action becomes more plastic, and experience increasingly capable of being detached from immediate conation. Finally, thought becomes the object of an interest of its own, the processes of correlation themselves are subjected to critical scrutiny, and a comprehensive survey is attempted of the fundamental ends of endeavour and of the ultimate categories of experience, with the object of relating them to the conditions of development of reality as a whole. In working out this general theory, Professor Hobhouse has given an analysis of elementary behaviour, of the processes whereby inherited capacities are moulded and modified by experience, which, in the main, seems to have been amply confirmed by the growth of comparative psychology since his work in this field was first published. It may be remarked in passing that his notion of 'correlation' seems more plastic and more serviceable in the interpretation of mental evolution than the notion of *Gestalt* or configuration with which it has many affinities.[1]

In the field of human psychology, Professor Hobhouse has supplemented his earlier discussion by a chapter in his *Social Development*, in which he deals with the general psychological conditions of group life and development, with the nature of the social impulses, the forces that make for antagonism and co-operation and the nature of social mentality. Unfortunately, this important contribution to social psychology cannot here be further discussed.

(*c*) *Ethical Theory*.[2]—The function of mind on its cognitive side is to correlate the elements of experience leading up to a system

[1] Cf. Appendix to third edition of *Mind in Evolution*.

[2] *The Rational Good*, 1921.

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of consilient judgments. When applied to the world of practice correlation is directed towards linking up the elements of endeavour into a harmonious whole or synthesis of impulse-feelings. This general conception is the basis of Hobhouse's ethics. He seeks to show that there is a rational good, a good self-consistent, interconnected and objective in the sense of being based on universal principles inherent in the system of purposes taken as a whole.

By the term 'good' we mean, Hobhouse argues, at least to refer to something which appeals, which evokes a response, something that is the object of a mode of feeling or an attitude that we call generically favourable. The judgment 'this is good' asserts a harmony between an experience and a feeling. Strictly it is the total relationship between an experience (a conation, a feeling, or a cognitive state) and a feeling that is good. We do, however, speak of any term entering into the relationship of harmony as good 'by right of membership.' A rational good would then be a harmony of experience with feeling carried consistently through the whole world of mind and its experience, and is defined as "happiness in the fulfilment of vital capacities in a world adapted to mind."

Hobhouse's ethics has sometimes been described as fundamentally hedonistic. But this is, I think, misleading and based on an inadequate appreciation of his views as to the nature of the springs of action. There can be no doubt that for him impulses are the primary thing, and that for him, as for Butler, impulses 'determine upon their objects,' and not upon the pleasures derived from their satisfaction. The idea of good is the definition of an impulse, *i.e.* renders articulate and explicit the object to which an impulse is directed. The objects of impulse-feelings must not, however, be taken as constituting a self-contained good. Nor must the feelings be separated from the experiences which they tone or qualify. The good is an organic whole constituted by the terms experience and feeling in a relation of harmony. This harmony is felt as pleasure, or rather as happiness. But happiness must not be separated from the kind of life in which it is sought, and Hobhouse explicitly maintains that the rational object of human action is a type of life and not a type of feeling.

(*d*) *Social Philosophy.*[1]—The theory of harmony may appear to some purely formal and empty of content. Professor Hobhouse has shown its fertility by the success with which he has applied it to the basic problems of social organization, political and economic. In particular, the theory of harmony avoids, on the one hand, the false separation between the individual and the social which vitiates individualism, and, on the other, the tendency to merge individuality

[1] *Elements of Social Justice*, 1922; *Metaphysical Theory of the State*, 1918.

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into a colourless absolute characteristic of the social philosophy of some of the idealists. The category of the common good is interpreted by him as neither the sum of individual goods, nor as another kind of good opposed to them, but as a harmony of which individual goods are interrelated elements. The theory of rights is based on this conception of the common good. For rights are claims to the conditions of harmony, that is, the conditions requisite for the harmonious fulfilment of personality in society. It follows that rights do not limit the common good from without, but rather emerge from an analysis of the constituents of the common good in the varying and complex relations between men in society.

The conception of harmony is also used by Hobhouse in the definition of freedom, personal and social. There is freedom when the impulses are adapted and shaped by the requirements of life as a whole, and when the active and developing unity of the self finds expression in and through the harmonious co-operation of the impulses themselves.

In his account of social freedom Hobhouse has sought to lay down the general principles of liberal legislation. The ultimate basis of liberty is that it is the condition of spiritual growth. Spiritual unity in the common good can only flourish in a spiritual medium and cannot be obtained through compulsion. Liberty in general must however be differentiated into 'liberties,' *i.e.* rights. "The system of rights is the system of harmonized liberties." This implies compulsion, for compulsion may be necessary in the maintenance of rights. It must, however, only be used (*a*) when it can be shown to be so required, and (*b*) when its use will not endanger the very ends of social organization, namely, the harmonious growth of personality. These general ideas are applied by Hobhouse with marked success to the problem of the state control of industry, of the right of free discussion, of religious toleration and so forth.

The principles of distributive and corrective justice are explained by Hobhouse on the basis of his general theory of rights as conditions of harmony. The fundamental principle here is that of equality, which is defined as the claim that each has to the harmonious good proportional to his qualifications for sharing in it. There must accordingly be equal satisfaction of equal functional needs, and differential treatment can only be defended on the basis of differential functional requirements. Measures preventive and curative, on the other hand, must be provided directed against misfunction and malfunction. On the basis of these general principles, Hobhouse has worked out a theory of political and economic organization marked alike by logical coherence and comprehensiveness and by a profound and sympathetic insight into the difficulties and perplexities of actual life.

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(*e*) *Theory of Social Development.*[1]—Sociology is conceived by Hobhouse as the study of human interrelations and interactions. It utilizes various specialisms, some of which fall within the social field, *e.g.* economics, while others fall outside it, *e.g.* biology. It, however, is not satisfied with a mere patchwork, but aims at nothing less than a synthetic account of social life and development regarded as a whole. Towards this ambitious scheme Hobhouse has made contributions of the first rank, and it is safe to say that he has laid down the general lines of investigation which sociologists will for long have to pursue if sociology is to rank as a science. It is impossible here to attempt even a summary of his achievements, and only the general lines of his methodology can be indicated. Roughly it may be said that it consists of the following steps:—

1. He has worked out a social morphology, *i.e.* a classification of the forms of social institutions, based on the data of archæology and history.

2. He has elaborated a method for effecting the transition from morphology to development. This consists essentially in an endeavour to correlate the various aspects of social change from the point of view of their contribution towards the general advance of the community, as measured by certain criteria. These he deduces from the general nature of development. They are efficiency in control and direction, extension in the scale of social organization, co-operation in the satisfaction of mutual needs, and freedom or scope for personal development.

3. He has put forward a hypothesis that there is a broad correlation between social development as thus measured and the growth of mind. To establish this he has distinguished stages of mental evolution in its various aspects. Thus on the cognitive side he distinguishes (i) an incipient phase in which the rudiments of articulate thought are still in process of formation; (ii) a second phase in which what may be called the common sense or empirical order is built up; (iii) a phase of conceptual reconstruction in which thought systems are built up largely on a dialectical basis; and (iv) a phase of experiential reconstruction in which efforts are made to relate the thought structure itself with its conditions in a developing experience. A parallel movement may be followed in the growth of human control of the environment. This moves from a stage of semi-dependence upon nature, to one in which natural materials are deliberately shaped towards human ends, thence to a stage in which the overt forces of nature are utilized in the transformation of natural resources both in kind and direction, and finally to a stage in which efforts are made to disentangle the underlying conditions of life and development and to utilize the knowledge

[1] *Social Development*, 1924; *Morals in Evolution*, 1906; 4th edition, 1923.

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thus gained in an attempt consciously to direct social evolution. On the ethico-religious plane he distinguishes (i) a phase in which the spiritual is wholly confused with the material; (ii) a second phase in which the spiritual stands out as an anthropomorphic and even superhuman personality; (iii) a third phase corresponding to the stage of conceptual reconstruction in which the spiritual is interpreted as an embodiment of ethical and intellectual ideals; and (iv) a fourth in which it is regarded neither as an unconditioned creator nor as the whole of things, but as an element in reality making towards harmony. In the development of imagination he traces a movement from (i) the lowest grade of art which reflects an incoherence of ideas; (ii) a stage illustrated by early oriental art reflecting the clear-cut, concrete ideas of common sense; (iii) an idealistic or romantic phase, the imaginative expression of conceptual reconstruction, in which the mind moves in an order of its own creation; (iv) a phase of realism, of which the wider developments are essentially modern and which corresponds to the stage of experiential reconstruction, which with a certain cool detachment and a critical attitude towards ideals, yet conveys a longing for what is beyond experience and knowledge.

It is not suggested that these movements are precisely parallel or that their rate of progress is equal, but that, making due allowances for differences in conditions in different periods of time and different parts of the world, they may be taken as a general indication of the growth of mind. Hobhouse then proceeds to show that on the net result there is a broad correlation between mental advance and the growth of the social fabric. Reverting to the criteria of social advance above mentioned, he shows that in the first phase there is good evidence of the expansion of organization in scale and efficiency, but at the cost of mutuality and freedom. Government comes to be authoritarian in character, and social differentiation rests on the principle of subordination. In the higher phases this growth in efficiency and scale increases, but there is also increased subordination. With the beginning of the stage of reflection and the growth of critical thought, forms of free government arise, and, in theory at any rate, there emerge ideals of a unitary spiritual order. The embodiment of these ideals is, however, exceedingly restricted in the ancient world. In the stage of experiential reconstruction there is not only an increase in scale and efficiency, but the elements of mutuality and freedom are beginning to receive concrete embodiment on a world scale, and we find attempts at a genuine synthesis of personal and political freedom with moral universalism. A survey of history thus suggests that there has on the whole been correlated growth, and the hypothesis is urged that this expresses the growing power of mind in man.

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4. Professor Hobhouse next contends that the process of development, so far studied by him, independently of the problem of moral evaluation, may be shown to be on the whole in the direction required by his theory of the rational good. For the harmonious fulfilment of human potentialities can only be achieved by the co-operation of all mankind, resting upon free and rational conviction and aiming at the collective control of the conditions of life, internal and external. Social and ethical development have a common end, and can be measured by the same criteria. This coincidence is not a mere dialectical trick, but is rooted in the fact that the good is the principle of organic harmony, and to the extent to which social development embodies this principle it is good. Nevertheless, social development only coincides with ethical development "as a whole and in its completeness." In actual fact development proceeds by a union of partial developments, and these may not be, and often are not, in conformity with ethical requirements. What is claimed is that on the whole a substantive advance has been made as judged by ethical criteria. In the extension of organic harmony Hobhouse finds the reality of progress. This is essentially the work of rational mind working in individual centres, but expanding in scope and articulateness, linking up partial developments into wider and wider unities, and having for its final purpose the harmonious fulfilment of human potentialities on a world scale. Progress is accordingly not automatic, but depends upon human thought and will. The belief in the reality of progress rests ultimately on the fundamental rationality of mind, on the possibility of forming an intelligible, coherent conception of a good common to humanity, and of securing an effective will directed to this good.

(*f*) *Theory of Reality*.[1]—The mind which Hobhouse takes to be the moving force in the history of civilization is not a unitary mind akin to that which we recognize in individual personalities, but an interconnection among minds developing towards harmony. This principle of interconnection he seeks also to apply to the explanation of reality as a whole. Here again only the barest outline of his theory can be attempted. He proceeds partly by an examination of the facts of evolution, partly by an analysis of the logical requirements of explanation, when applied to a whole which is undergoing development, or rather in which there is development. A synthesis of experience shows that nature is a system which maintains itself amidst the innumerable changes of its parts, and this implies a continuous interrelation of functions. Further, evolutionary science may be said to have shown that there is continuous development, in the sense that in the processes of change finer and more articulate structural wholes appear. This is taken as evidence of an underlying

[1] *Development and Purpose*, 1913; revised and largely rewritten, 1927.

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correlating activity, operating continuously with cumulative effect. Orthogenic evolution points to a nisus in nature towards ever more comprehensive and articulate synthesis, an effort towards the extension of the sphere of organization. This, it is urged, cannot be explained except on the assumption of a conational force in reality, a force that, so to speak, tries, throws out efforts, and seeks to grow and mature.

This hypothesis is confirmed, Hobhouse thinks, by the logical requirements of systematic explanation. The rational ideal points to a system of interconnected judgments asserting a reality of interconnected parts. Each part must have its ground within the whole. But if everything has a ground, there can be no unconditioned datum. It follows that the system must consist of elements each conditioning and conditioned by the remainder. If this notion of a system of reciprocally determining parts is applied to a changing order, it will be seen that any point that we start from as the cause of what follows must be also conditioned by what follows. This is only possible if it is determined by a tendency referent to the outcome, that is, by a tendency to bring about the resulting process. Ordered process, in other words, is a continuum in which conditioning is not unilateral, and this, it is urged, involves a conational or teleological element.

Thus both empirical synthesis and epistemological analysis point to a view of reality in which there is operative a conational factor bringing about correlation between elements otherwise indifferent or unrelated. Reality reveals indifference and conflict, but also an increasing trend towards unity. The unity cannot be that of a mechanical system, for then we should be unable to account for the emergence of varying unitary systems in which the elements appear in varying collocations. Nor can the system be completely organic, in which case the same difficulty would apply, and we should further be unable to account for the element of indifference. We need a system of elements to some extent self-determining, and thus so far in principle indifferent to the action of other elements but also containing something in them that makes for mutual determination and growing correlation. The correlating factor is conational. It may be supposed to operate through trial and error, and later through conscious purpose. It proceeds by a series of syntheses from that which is manifested in the emergence of the structured wholes of the physical world to that of living organisms and societies of organisms. The process is, however, neither unitary nor direct. It involves continual disturbance of equilibria, and is thus a potential source of conflict. In the higher phases the process comes to some extent to be consciously directed, yet even then its problems are not thereby necessarily simplified.

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The power behind development, or the correlating agency, Hobhouse calls Mind. This, though coeval with reality, is not all reality, but only an element within it, and like other elements determining and determined. It must not therefore be confused with the Unconditioned of metaphysics. Nor must the Central Mind be regarded as the systems of minds taken together. Minds in so far as they act indifferently to the action of other minds behave mechanically, in Hobhouse's sense of this term. Mind is rather a common factor in all elements of the real, that in them, namely, which makes for unity and order.

Hobhouse's philosophy is thus to a certain extent pluralistic, since it supposes elements indefinitely numerous, each in a measure self-determining; yet the system is organic, for the self-assertiveness of the parts also constitutes their contribution to the whole by which they are conditioned. The principle of unity does not generate the parts, nor does it absorb them; it merely conditions them as it is conditioned by them. We thus have strictly neither a monism nor a pluralism, but a system of elements, distinct yet mutually conditioned.

Hobhouse has sought to consolidate his position by painstaking and detailed study of a very wide range of fact; and he was ever ready to revise his views in the light of advancing knowledge. But behind all his work and inspiring it there lay certain direct and simple experiences of goodness and beauty to which he has given brief but moving expression in many of his writings. Upon these experiences, in the long run, rather than upon anything else, perhaps, he rested his faith in an indwelling spiritual power.

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THE IDEA OF CAUSE [1]

A. C. EWING, D.PHIL.

SOME modern thinkers have supposed that "cause" is an outworn notion, or at least that it is one of which modern science has no need. This is due mainly to the discovery that, while the scientist can give us general laws as to what in fact happens, he cannot help us to discern the reason for the laws or the inward nature of the forces on which they depend. He can tell us the "that" but not the "why"; he cannot show us in a single case that the effect follows necessarily *a priori* from the nature of the cause, that any other effect than the one which actually takes place would be logically impossible. He has studied the law of gravitation, but this law does not enable him to see *why* material bodies should attract each other in this fashion; it is only a generalized statement of the fact that they do. He knows that certain substances, if absorbed by eating, will nourish and others destroy our tissues; but he cannot say *why* they should do so. He can no doubt analyse them further and discover that, for example, meat is nourishing because it contains a large proportion of nitrogenous matter, but he could not tell *a priori* whether this nitrogenous matter would be likely to nourish or to poison us. Only where mathematics can be applied do we see necessity in such a way that any alternative becomes inconceivable to us; but mathematics alone can never establish from a quantity present here and now what quantity there will be at a later time or in another part of space. Mathematics can show, *e.g.*, that, if there is 2 + 2 here and now, there must be 4 here and now, not that, if there is 2 + 2 here and now, there will be 4 in an hour's time or a mile away; and therefore it cannot be made the sole basis of any causal law whatever.

Now earlier philosophers postulated mysterious "powers" or "forces" behind the laws of nature that would explain all these laws if only we could understand the explanation; they postulated that events followed each other because of a rational necessity, whether they ultimately derived this necessity from the will of God or from the nature of reality. They would have admitted that we could not understand the rational necessity; but they still supposed it to be present, just as the laws of mathematics were still

[1] I have to thank Messrs. Kegan Paul, Trench, Trübner & Co. for their kind permission to use, in compiling this article, my book published by them, *Kant's Treatment of Causality*.

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valid even before they were discovered by any mind. Modern thought, on the other hand, because it cannot see why the effect follows necessarily on the cause, tends to class this necessity as a metaphysical figment or a mere superstition which should now be discarded, although our inability to understand it does not indeed prove its non-existence. Consequently some thinkers, because they do not admit any inherent necessity connecting cause and effect, deny the conception of "cause" altogether as neither needed by science nor capable of being established by metaphysics.

There is, however, one sense of the term in which "cause" and "causation" are absolutely essential if we are to have any science, or, what is more, any rational action whatever. Every scientist must assume some principle or principles, whatever he calls them, by means of which he is justified in passing from what has been observed to things or events of the same kind which have not been observed. Without this he could not make even probable inferences from the past to the future; he could not say that if I let go a piece of solid iron in mid-air it was one whit more likely to fall to the ground than to soar up to the sky, because he has not observed this piece of iron before, only other pieces; or, even if he has observed it falling before, that does not justify him in even guessing that it will do so again, unless he supposes some principle according to which it is at least more likely than not that an event which has happened before under certain conditions will repeat itself when the same conditions recur. Now such a principle could never be established by observation alone, for the simple reason that we have never observed the future, only the past. We have not observed future instances of bodies falling, only past instances. Yet without assuming such a principle we cannot take the simplest practical steps, let alone develop a science of nature; it would be futile to eat if we did not assume that the food was at any rate more likely to nourish than to poison us, it would be futile to light a fire on the coldest day if we did not assume that the fire was at least more likely to warm than to freeze us. I have stated the principle in regard to inferences about the future, but the difficulty arises equally in the transition from past events that have been observed to other past events which have not. If there is no principle by which we can pass from what has been observed to what has not, the scientist has no right to say, for instance, that all water on the earth is made of oxygen and hydrogen, only that the relatively very few specimens of water examined were at the moment of examination (not necessarily before or after). This does not mean merely that he would have no right to be absolutely certain, but that he would have no right to think it in the least degree probable. And a principle even as to the probability of unobserved happenings cannot possibly

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not follow that any specific entity of that number conforms to the law.

At the present time the work of Professor Eddington in particular draws attention to the enormous change occurring in Science. The latter, he maintains, in common with others, does not give us knowledge of the substance, stuff, or material of the physical universe, but only a knowledge of its structure. Nor do the more familiar laws of physics seem to be fundamental. The scientist is confronted by the possibility that the laws *governing* the physical world are more fundamental than these laws, and that they are laws which the human mind does not find congenial to it. The entities that enter into the formulation of such laws seem peculiarly elusive. It is necessary to give up the attempt to interpret nature in terms of familiar images based on ordinary experience. The consequence, according to Professor Eddington, seems to be that the traditional deterministic view of Nature must be surrendered, for the old notion of causality is no longer applicable and an indeterminancy of behaviour seems to be an essential feature of phenomena in nature.

II

So much for the historical and scientific aspect of the question for the present. I now wish to turn to the practical aspect of the matter. Any social organization is an organization of human beings, and its functioning rests upon a very important assumption. That assumption is that the individual human being is an agent, and that means that he is capable of initiating, and does actually initiate, occurrences, these being *his* acts. This capacity to initiate occurrences is what is meant by freedom, and is to be understood in contrast to mere transmission of occurrences. In the latter case the individual is only a medium through which a change or movement, starting at some point in the universe, is passed on; while in the former case the change or movement originates with the individual as *an act of will.*

Conjoined with the idea of freedom is the idea of responsibility. This idea is in practice expressed in the form of approval and disapproval, and in a doctrine of rewards and punishments. Moral judgments, as well as law and the administration of law, repose, or at any rate have reposed, on this idea. Determinism has never been admitted. The assumption is that the individual is "free", and the onus of proving in any specific case that he was not free rests upon the individual or his friends, and involves the production of evidence that he was not normal. Cases of abnormality being excluded, evil is attributable to a defect or fault in the individual, and carries with it liability of a certain kind. The individual is held

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to be capable of appreciating what is significant and important for social life; and if his acts show that he does not entertain such appreciations, it is, or has generally hitherto been, assumed that he is of an evil or anti-social nature, and that such a nature requires punishment. Such an individual was regarded as getting merely what he deserved.

I have called this idea of freedom and responsibility an assumption. It is not a "fact." It is at best a belief, and it may be only an attempt to give justification to modes of action already established. If it is a belief, its truth is not self-evident because of the obscurity and complexity of the factors involved. There is not much help to be gained by an appeal to man's experience. The testimony of individuals on the matter is contradictory and conflicting, and it is necessarily so, seeing that what is in question is a most obscure phenomenon, and one of great complexity, the terms of which are difficult to define clearly and exactly. It is at any rate a belief that has been accepted and applied in practice, with specific consequences for human life. It is, however, an utterly vicious process of argument to accept such consequences as facts of moral and social life, and then to assert that such facts necessarily point to freedom. They only point to a belief in freedom, and are themselves dependent on this belief. I am here drawing attention to what is a very prevalent confusion in all moral and social studies, namely a confusion of facts and beliefs. The consequences—in the form of demands and of practices—which follow from, or are logically drawn from a belief, must never be taken as evidence of the existence of what the belief asserts to be the case. Many social practices could be shown to have arisen from utterly erroneous beliefs, and but for these beliefs would never have come into being. The belief in freedom may have been and may be of enormous importance for morality, in the sense that our approvals and disapprovals, our treatment of men, our rewards and punishments, our prohibitions and so on, arise out of that belief. Yet the belief *may* be erroneous. I am raising a question, not about the belief in freedom, which I admit to be a psychological fact, but about the fact of freedom.

The belief in freedom may be simply bad metaphysics and worse science. At any rate, it is a matter for consideration. To show that the question is still a sufficiently living one, it is enough to draw attention to the re-examination of the philosophical basis of law that is taking place at the present time, especially in America.[1] Law is ceasing

[1] For a general view of this movement and for references to some of the relevant literature see *International Journal of Ethics*, April, 1924, p. 243, "The Functional View of Legal Liability," Finkelstein; and July, 1924, p. 364, "Current Religious Thought and Modern Juristic Movements," Albertsworth. Dean Pound is associated with this movement.

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to be regarded as embodying absolute and final principles. It is a social agency for furthering the welfare of the individual, that being formulated in religious and ethical literature. It consequently requires continual and new readjustment to new conditions insight. It is subject to repeated experiment. The older view of Law rested upon various assumptions or dogmas which may have worked fairly well in a simple social state, but which fail in the presence of a very complex and highly organized social life. This is the case with various doctrines or premises of the common law. It is the case with the legal doctrine of liability for fault. "In all these developments and changes in the law," says a writer,[1] "it is seen that the old Puritan notion of an abstract man, governed by an objective standard of freedom and moral responsibility, and therefore liable for his acts, has passed away in many fields of the law, and in some others is slowly expiring."

This changing conception of the law has been largely brought about by the influence of scientific ideas—physical, biological, and economic science. It stresses the idea that law must be designed to secure the smooth and efficient working of the social organization, and that law endeavours to compel human conduct for that end. But it also emphasizes that the social organization, of which the individual is a member, is exceedingly complex, and that the interlocking of the activities of individuals is making it increasingly difficult to determine where individual fault lies and what is its degree. The idea of individual fault must also be more and more modified in view of the fact that an increasing number of the activities of the modern complex social organization involve in their very nature an element of risk. This is true, of course, in the first place, of many modern industrial activities; but it involves an idea which can easily in due course be extended in its application to *all* human activities. These industrial activities are now essential to a modern society, and are carried on in spite of the element of risk. There is no question of individual responsibility or fault, but of risk inherent in an activity or a process, and of steps to be taken to cover the risk. Scientific theory and results, brought to bear upon human life in its other aspects, could easily lead to the view that social life, since it involves human beings, contains an element of risk, and that a social group should take cover against that risk. The presence of the moral and social delinquent is a risk, and is to be subjected to treatment in order that the element of risk may be lessened. The idea of freedom would thus appear to be unnecessary to the understanding of the facts.

[1] Albertsworth, *International Journal of Ethics*, July, 1924, p. 376.

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III

It is curious that while contemporary science seems to be providing grounds for the belief in freedom, the social sciences should be developing ideas and methods which render the belief unnecessary, or at least render a decision as to freedom or determinism a matter of indifference. This attitude of the social sciences is no doubt due to the conviction that their inquiries cannot rest upon what must seem to be a highly controversial metaphysical assumption, and that they cannot await the somewhat hypothetical time when a solution may be obtained. They prefer to proceed at once to the investigation of their respective subject-matter and to devise their own methods and ideas with the view of controlling the phenomena with which they deal. In these circumstances I want to reopen the question of freedom and to put forward a few considerations which I think are in line with some of the greatest philosophers, especially Spinoza.

The treatment and the solution of any problem are affected to an extraordinary degree by the manner in which the problem itself is approached, that is, by the terms in which it is stated and conceived. For instance, much recent social psychology [1] faces a problem conceived in terms of an *inert* individual who requires to be roused into activity. It regards rest as the *natural* state of the human being; and the problem then is, how and by what means is the individual set in movement? The answer is given in a theory of instincts as "the prime movers of all activity." This way of approaching the problem is exactly analogous to the way in which the ancients approached the study of the physical universe, with the consequence that amongst the ancients physical science could make little progress. Modern science at once made a tremendous jump forward when Galileo made a slight but profoundly significant alteration in the statement of the laws of motion. He refused to regard "rest" as anything more natural than motion, and considered that rest and motion were not opposites, but a matter of degree.

Accordingly, if we follow this analogy from physical science, we should not assume that the human being is originally at rest and requires a stimulus to set him in motion, but we should say that he is naturally active and that our problem is then one of determining the factors which give direction to the activity. This consideration naturally modifies the idea of "initiating" an occurrence, which idea, we have seen, is present in the conception of freedom. It implies that the *direction* of the individual's activity may be in some sense dependent on the individual; but the question remains, in what sense? The meaning of *initiating* an occurrence becomes narrowed to "giving direction to" an activity.

[1] Esp. McDougall's.

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Now, if the "direction" were dependent wholly on the individual, there might be a sense in which the individual is free. I raise, therefore, the question: What factors can be discovered to give direction to individual activity, and are these factors in any clear sense dependent on the individual? I admit here quite readily that I may be stating the question in a manner which presupposes too much the influence of the ideas of traditional science. I am making use of the idea of causality, while against me it may be said that it is just here that the idea of indeterminancy, such as Eddington points to, may be applicable. My reply is that I doubt whether the idea of indeterminancy is applicable at this point; and in any case I can make use of such an idea in no way that I find helpful and intelligible. I am at present going to base my argument merely on what is observable and verifiable by introspection.

It is necessary to distinguish between purely physical action or movement and action that is distinctively human. If, for instance, a man is standing in the middle of a roadway, and a motor-car bears down upon him and throws him on to the pavement, it would be generally admitted that that was a case of physical causation. If, however, the person in the roadway sees the approaching motor-car and steps aside on to the pavement, there is a complication. There is no doubt that very frequently the oncoming car is said to be the cause of the man's movement in such a case, but that is a loose way of talking. It is quite clear that the car in the second case is not the cause of the man's movement in the same sense as it is in the first case. Strictly, the condition of the movement in the second case is the man's consciousness of the car as something bearing down upon him and involving certain specifiable consequences. That is, the condition is an apprehended significance; and, for the rest of this paper, I shall, to signify this, use the term "appraisement"—whether it be that of an object or a situation. I do not in any way assert—and this qualification is important—that in all cases appraisements are true or valid. My argument so far makes no assumption about the truth or falsity of these. It is quite possible to conceive a case where a man "sees" a motor-car bearing down upon him and where he steps aside, while there may be no real car at all. A person may form a belief that another is dishonest, and base his conduct on such a belief. Yet that belief may be mistaken. But it remains a matter of every-day experience that such beliefs or appraisements determine men's conduct.

I assert that such determination of human action by an appraisement is a matter of ordinary experience and verifiable by careful introspective analysis; and that, where individuals maintain they were in no such way determined, they have merely failed in adequate self-analysis. The indeterminancy which is sometimes held to be

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characteristic of human conduct and identified with free will is rather an incalculability of the appraisement which in any specific instance will operate; but such incalculability does not provide any ground for maintaining the existence of free will. I think there is justification for asserting that human action, like all physical events, is subject to the general and abstract formula: if x, y, z are present, an event A occurs. The difference between physical events and human action is not that the former is subject to the formula while the latter is not, but it is to be found in the factors represented in the two cases by x, y, z. The difficulty in admitting this is traceable to a belief that such a formula *must* be applicable to only one kind of event, or that x, y, z must represent one type of factor. It was a belief of this kind that in former times prompted the mechanists and likewise induced others to oppose mechanism. But there is no need to accept any such belief. The entities that enter into the statement of a law can quite well vary according to the kind of phenomenon that is in question.

Appraisements of objects or of situations, I repeat, are conditions of human action. If it be replied "not in all cases," then I ask, Is the action in such cases conditioned, and, if so, by what? In my view, such actions must be purely physical, and the "physical" here is to be understood simply in contrast to consciousness. Purely physical actions would be those where no factor of a conscious kind enters as a determinant. But I can imagine the theory of instinct pushing itself forward here and maintaining that instinct is a determinant of human action—indeed, the fundamental determinant. I confess, however, to great difficulty in making the idea of instinct intelligible. What is meant by the statement that at a certain period of the year an animal will make its way towards the sea to reach its breeding-grounds, "guided by its wonderful instinct"? In general, what is meant by "instinctive action"? I do not wish to debate the matter at present, but I desire to draw attention to the difficulty. I could understand instinct in the sense of a property of certain glands or even of certain nervous tissue—a property that manifests itself in a certain form of behaviour; but in that sense it is a physical determinant. But I also hold that the so-called instinctive actions are conditioned by an appraisement. Flight is admitted to be an instinctive reaction to *danger*, but danger is an appraisement of a situation. A person, passing through a field where a bull is grazing, takes to flight because the attitude of the bull has a meaning for him. An adult gets out of the way of an animal or a motor-car, while a young child would pay no heed to either. The consequence is that the distinction between instinctive action and deliberate action disappears, and the difference is seen to be really one connected with the extent to which all the relevant factors have been apprehended,

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and hence with the time-interval between the first presence of the situation and the reaction to it.[1]

I see, therefore, no reason to accept a determinism based upon the supposed existence of instincts as a determinism additional to and different from those two which I have admitted. The determinism based on instincts is covered either by purely physical causation or by the operation of appraisements. Conduct determined by the latter is that which is distinctively human.

IV

I have maintained that human action is conditioned by appraisements. I now come to the question: Are these appraisements themselves determined? I am really raising a very difficult and a probably insoluble question. But, philosophically, there is no harm in that. I feel, however, some justification for raising such a question in the fact that there are and have been theories which have answered the question in the affirmative, and which, therefore, presumably have had such a question in view. The question which I have raised has been considered in a narrower as well as a wider aspect. I shall first draw attention to the narrower view.

The latter is the Marxian or Economic Interpretation of History, which is called by Engels "the fundamental thesis" of Marx. According to this thesis "the methods of material production condition the social, political, and spiritual processes of life. It is not the consciousness of men that determines their existence, but their social existence that determines their consciousness (*i.e.* their ideas)".[2] The mode of economic production and exchange, dominant at any period, necessarily gives rise to a certain type of social organization, and this mode of production and its consequent social organization constitute the basis on which arise the political and intellectual history of that period. The economic life is the determining factor, and all ideas—political, juridical, religious, philosophical, literary, and artistic are merely effects of it.

This scientific determinism maintains that ideas are determined. But it is not at all clear what is meant by saying that they are so. A certain degree of uniformity and constancy are undoubtedly

[1] Further consideration of this would lead too far away from the present topic. McDougall makes the psychical factor essentially an "emotion." But it may be questioned whether an emotion is present, unless an appraisement of a situation occurs first. Without such an appraisement, there will be no emotion. Hence the psychical factor will disappear, and a purely physical view of human action will remain.

[2] Marx: *Zur Kritik der politischen Oekonomie* (1859). Eng. trans., Stone, pp. 11–12.

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found to prevail in a social group, and also to some extent in different groups within the same level of civilization. This fact of uniformity and constancy has indeed led to a widespread and well-known theory of social evolution, the assumption of the theory being that under the same conditions the human mind will evolve similar beliefs and develop similar practices; and, following the idea of causation, it maintains the doctrine of a necessity in human evolution, revealed in a necessary sequence of stages in human development. Such a theory is open to many attacks, and at the present time is being strongly assaulted. The influence of contact and diffusion must be allowed for. Within a specific social group training, education, and the influence of tradition all serve to effect sameness of appraisements; and it is often the deliberate aim of teachers and others to secure a social structure which will automatically ensure certain kinds of appraisements. What I am seeking to emphasize is that a social organization becomes, relatively to the individual member of it, itself an existent amongst others that in some way affects the appraisements of the individual.

Now the Marxian determinism stresses a corresponding necessity in human evolution. Does it not say that Capitalism must necessarily collapse? The Marxian theory and the theory of the necessary stages in human evolution are alike open to a similar objection. Any existing social organization has its basis, I contend, in the appraisements made at some period in the history of a group of people, and made by some one or a few of these people. Succeeding individuals find themselves within an existing social structure, and enmeshed within a mass of prescriptions—of "oughts" and "dont's"—which primarily have their origin in these appraisements on which the social structure has been founded. This social structure with the accompanying mass of prescriptions constitutes an object or situation which these later generations will in turn appraise; and they will determine their conduct according to their own appraisements. The actual difficulty which ethical and political theory have to recognize is that the appraisements which later generations may form may not, in spite of educational efforts and so on, continue to be the appraisements on which the social organization was originally founded.[1] What is of importance in this, for the present purpose, is that appraisements lie at the basis of a social organization and continue to mould the social organization. Similarly, with regard to the Marxian theory, the question must be raised: Is not the economic structure itself determined by man's appraisement of factors which are not themselves in the first place economic? And does not the economic structure continue to be moulded partly by fresh appraise-

[1] *E.g.*, an institution, like Parliament, is assigned a nature and made to fulfil a function which are quite different from its original nature and function.

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ments of physical and human nature and partly by appraisements of the economic system existing at a particular period of time? I emphasize that the determining factor is appraisement—*appraisement* of the economic system, and not the economic system itself, as Marxianism states.

V

I have considered the question of the determination of appraisements. This is a special aspect of the wider question whether ideas (including, say, imagery, beliefs, etc.) are in any sense determined. Is a man's social, legal, and political appraisements determined by economic conditions in any sense of determination different from that in which a scientist's ideas or appraisements of physical nature are determined by physical nature? It is quite obvious that any existent, such as physical nature, a social organization, etc., is a condition of a man's appraisement of it. But does any such existent determine or cause an appraisement of it in the way in which a moving billiard ball determines the movement of another billiard ball? This question is simply one which raises in a slightly varying form the old problem of the relation of mind and body.

Bacon and succeeding empiricists held that "things" produce ideas in the mind. This causal theory of perception is only a variant of determinism. I think that such determinism would mean that the relation between one's ideas and the objective existent would be necessary, that is, that the existent must inevitably be known truly and be known similarly by all. Yet there is no reason to suppose that this is so. The existence of an objective world does not necessitate a knowledge of itself. The danger inherent in a situation does not necessitate an appreciation of itself on the part of an individual to whom it might be of the highest advantage to be aware of such danger. There is not a uniformity of appreciations amongst men, even though objectively the world is the same in all cases. Against this, it might be urged that human nature is, as Bacon and others have held, the disturbing factor, and that if these disturbing factors could be removed, physical nature could trace out accurately in all minds its own characters.

The point at issue is practically important. Law and the administration of law, as well as moral opinion, have held that the individual is capable of appreciating what is significant and important for social life. The qualifying condition, slowly admitted, is that there be no abnormality present; but such abnormality must be established by the defence of the accused.[1] Society demands a fairly marked

[1] And "abnormality" remains rather vaguely defined.

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uniformity of appraisements or ideas. The failure to entertain those appreciations essential to the stability and existence of society is attributed to a fault in the individual. The present dispute is as to the nature of this "fault"—is it moral (*i.e.* a matter of free will, for which the individual is responsible), or is it determined by non-moral factors? Insistence upon free will, as has been the past attitude, would mean that there were no relevant non-moral factors in the determination of ideas or appraisements. The modern tendency is to stress the part played by non-moral factors, and to maintain that man's ideas are largely, if not wholly, determined by such factors; hence it is argued that the capability of knowing is not a perfectly specifiable property characteristic of every individual; it is indefinite and variable.

Biology and physiology go a long way towards suggesting that bodily factors—state of the blood, of the brain, of the tonsils, of the teeth, of certain glands, etc.—have an important bearing upon the mental capacity of the individual, while the latter seems also determined by all those factors which come under the name of heredity. Physiological psychology also shows that ideas and imagery and emotions can be conditioned by various kinds of drugs, etc. It is true that the connections between the mental factor and the conditioning factors have not been established clearly and necessarily; but it remains possible that they will be given in the future more exact specification. There seems no reason, apart from a moral tradition, against the possibility of the determination of human ideas and appreciations; and there seems no objection to admitting such, seeing that it is admitted that hearing and seeing are definitely conditioned by the structure of the organs involved. If these, why not ideas and appraisements? Such a theory leads, of course, to a definite curative policy for social purposes. It assumes a body of social ideas and appraisements as a standard, and, correspondingly, it regards as standard organic patterns those who entertain these ideas and appraisements. The policy then becomes one of attributing deviations from these appraisements to organic deviations from the standard pattern, that is, of attributing a disturbing influence to factors in the constitution of the individual and of removing these disturbing factors. Socially, this policy has just as much to commend it as has the policy based on the idea of free will. It aims at securing what is regarded as socially desirable—uniformity of appraisements, and hence harmony of action.

It still remains, however, the case that the determination of ideas and appraisements is not exactly known. A mysteriousness hovers over the relationships involved. It is quite conceivable that it is just in regard to the coming into being of ideas and appraisements that "indeterminancy" may be applicable. I do not want to be

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dogmatic. Only I must say that ignorance of the exact nature of its relations cannot be regarded as a reason for asserting the absence of causation, and that I am unable to make clear to myself what indeterminancy can mean.

VI

Having, so far, argued that the question of freedom is answered first by asserting that human action is determined by appraisements (ideas), and, second, by asserting that the available evidence points to the determination of appraisements (ideas), and that therefore human action is determined, I now in conclusion want to ask whether it is possible to formulate a conception of freedom consistent with such determination.

I have in no way held that appraisements or ideas are always true. I do not even admit that the appraisements on which Society rests, and which, I have pointed out, are taken as a standard, need be quite true. The objective existent does not stamp its mark with unerring accuracy. There is no guarantee that man's appraisements of his own nature are sound, or are sounder than his appraisements of physical nature. Most people would admit that the construction of a tunnel or the sinking of a mining shaft by the application of engineering and geological knowledge may be thwarted by unknown natural factors, or that a piece of mechanism, like an airship, though embodying expert knowledge, may become, when put into action, a tangled mass through forces of nature. Yet the same requires to be admitted in the case of human beings. There is no guarantee that man's appraisements of his own nature have any greater relevance to that nature than have his appraisements of physical nature to physical events. There are features frequently characteristic of human choice and action that suggest that the knowledge possessed is not always relevant to the driving power, or that action is determined by factors of which the individuals concerned have no knowledge. In general, it is well known that there may often be a wide gulf between man's knowledge of a situation and the inherent nature of that situation.

Yet both are relevant to action. Man's knowledge, or more generally his appraisements of the situation (these appraisements themselves rest on the knowledge of the situation), determine his course of action. The inherent character of the situation will operate in another way, and render the action effective or ineffective. Which of the two will happen depends on the adequacy of the knowledge to the situation. Herein, in my opinion, is to be found the only meaning which can be given to freedom. Freedom is to be

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understood in terms of action that is determined by adequate knowledge.

Freedom is quite frequently asserted to consist in the power of choosing, and to be evidenced by the fact of choice. In the process of willing there is a stage where two or more lines of action lie open to the individual; he is said, to quote Professor A. E. Taylor,[1] to be "indetermined" in respect of either or any of them. He compares the two or more lines, and comes to a decision that one is better than the other, or that one is the best. Then the "indetermination ceases; my will is *now* determined. . . . I am determined to take A and leave B, and what I am determined by is this judgment of relative worth." I think, however, that to say the individual is indetermined in respect of two lines of action is like saying that a train in coming along a line towards a point of junction where two lines branch is indetermined in respect of either. The train, as a matter of fact, is determined right up to the point of junction; it is determined there afresh, by a new factor, to taking one or other of the routes. In the case of the individual it is also a matter of determination and redetermination of his action. The difference between the two cases is a difference in the nature of the determining factors. The individual's knowledge is a determining factor, for it leads to his being presented with a specific number of routes, and hence of fixing the nature of his problem. His moral appraisements are also determining factors in that they determine the selection of a specific route.

The appeal to reason or a rational self in this connection provides no solution whatever. A person does not escape determination by being logical, as Spinoza saw. Logicality only means that a person comes to be determined by one consideration rather than another, and that consideration will be one which falls within the logical limits of his general beliefs. The more strictly logical he is, the more will he be determined by his general initial assumptions; and the more defective the latter are, the more dangerous will his action become through rigid logic.

I accordingly conclude that freedom exists where the individual acts with a full consciousness of everything relevant to his action. *Real* control, in contrast to a mere belief about it, can exist only where knowledge is adequate and true. This is a Spinozistic idea. It is not even enough to say that freedom lies in the determination of action by the idea of the good. The idea of goodness is a purely formal character. More is required than this. The striving after the good must be enlightened by knowledge. I could therefore accept and give quite a definite meaning to the command: Seek the truth, and the truth shall make you free.

[1] *Contemporary British Philosophy*, p. 283.

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THE METAPHYSICS OF THE STOICS

PROFESSOR N. LOSSKY

THE metaphysical doctrine of the Stoics is a remarkable instance of a theory that appears to be materialism, but is in truth a form of unconscious ideal-realism. It is worth while to give an exposition of it in order to show that this is really the case, and, incidentally, to explain why a materialistic philosophy seems so attractive to many minds. I will refer chiefly to the teaching of the ancient Stoics, *i.e.* of Zeno, Cleanthes, and Chrysippus, and also to the later doctrine of Posidonius.

The founder of Stoicism, Zeno, maintained that "two principles, an active and a passive one, lie at the root of all things. The passive principle is the unqualified substance or matter, and the active principle in it is the Logos (Reason) or God. Being eternal, the Logos forms all individual things out of matter" (I, 85[1]). According to Zeno, the Reason which penetrates all things is εἱμαρμένη (I, 87), *i.e.* is the necessary connection of things, the law of nature. This can be gathered, for instance, from the words of Chrysippus, who says that εἱμαρμένη is Reason, in accordance with which the existing things have come into being, those that are about to exist are coming into being, and those that are going to exist will come into being" (II, 913). This Reason must not be understood as merely ideal and spiritual, as law and Providence; the Stoics insist throughout that Cosmic Reason is *corporeal*. It is the Fire (πῦρ) that penetrates the universe. To distinguish it from ordinary earthly fire they often call it πῦρ τεχνικόν, *i.e.* a creative fire, or ether, or πνεῦμα, and πνεῦμα ἔνδερμον—the breath of fire. They definitely say that this principle is a *body*, the purest and finest conceivable. This body is God (I, 153), and all other bodies and the world as a whole proceed from it.

The ancient Stoics definitely affirmed that all being is corporeal. According to Chrysippus, "that only exists which may be grasped and touched" (II, 359), "the cause is something that exists, namely, a body" (II,336). "All causes," the Stoics said, "are corporeal because they are pneumatic" (II, 340). With regard to the soul, Zeno maintained that it is "breath," but breath is a body, therefore the soul is a body (I, 137). Chrysippus proved the corporeal nature of the soul

[1] The references are to *Stoicorum veterum fragmenta*, Vols. I and II; the Roman figures indicate the volume and the Arabic the number of the fragment.

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as follows: "death is the separation of the soul from the body. But nothing incorporeal can be separated from the body; nor can anything incorporeal be in contact with the body; the soul, however, both is in contact with the body and separates itself from it, hence the soul is a body" (σωμα) (II, 790; see also 790–800).

Similarly the ancient Stoics definitely said of God that He is "purest body" (I, 153).

Their insistence on the corporeality of all that exists was often carried to the point of absurdity. Thus, for instance, they maintained that the qualities of things, "light, whiteness, warmth, are bodies" (II, 386). "Voice is a body, since everything capable of action and influence is a body" (II, 387). Even virtues and vices, wisdom, etc., were in their opinion bodies. Posidonius taught that (1) thought existing merely as expressed in words, (2) emptiness, (3) space, (4) time, were incorporeal; but according to Basilides these also were bodies.[1]

Such assertions suggest that the metaphysical teaching of the Stoics was the crudest form of materialism. If one takes them to mean that goodness, wickedness, wisdom, etc., are *substances*, the implication is that, *e.g.*, a fool can be made intelligent by introducing into his body a certain quantity of the wisdom-substance (some product of internal secretion, a hormone of some sort, as a modern biologist might say). It is possible, however, to put a more reasonable interpretation upon their teaching, taking it to mean no more than the kind of thing constantly met with in the materialistic literature of our day, namely, that a good-natured man has certain bodily characteristics, a bad-tempered one has definite physical peculiarities, a genius has a special kind of brain, etc. It will be shown later what the Stoics really meant by the corporeality of qualities; at present sufficient has been said to show why they are generally said to be thoroughly materialistic in their metaphysics. I will now pass to consider another aspect of their doctrine, namely, its pantheistic character.

Zeno and Chrysippus maintained that the earth and the sky were the substance of God (II, 1022). "Just as the different parts of the body unite to form the seed, but when a new body grows out of the seed they divide once more, so everything arises out of the One and is reunited with the One," says Cleanthes. "All the world is divine; but it may also be said that 'God is the soul of the world'" (Cleanthes, I, 532), designating by the word God the rational and active principle in the world.

As already said, this active and rational principle is a "fiery pneuma which interpenetrates and embraces all things" (II, 1051). The interpenetrating action of the pneuma is τονος, *i.e.* tension,

[1] See Stein, *Die Psychologie der Stoa*, v. I, p. 18.

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which spreads out from within each thing and returns into it again. This tension, in so far as it is directed outwards, determines all the qualities of things, and in so far as it is directed inwards constitutes the unity and essence of things.[1] It is something like a force of repulsion and attraction. Simplicius, indeed, expressly says that "the Stoics recognize force, or rather a rarefying and condensing motion.[2] The qualities of things, arising out of this tension, are said by Chrysippus to be "pneumatic or aerial tensions which enter particles of matter and give shape to them" (II, 445).

Elements less fine than fire—air, water, and earth—are formed out of the divine fire through a slackening of its tension; but an increase of tension leads up once more from earth through water and air back to fire. These two opposed directions of the process of tension correspond to what Heraclitus had called the downward and the upward path, in speaking of the transformation of the Fire-Logos into air, water, earth, and then back again into fire.

Not the whole of pneuma passes into the lower elements; a part of it remains at the end of the world and rules the world; the Stoics called it ἡγεμονικὸν τοῦ κόσμου (the ruling principle of the world). Not all of them, however, agreed that it was situated at the end of the world. Posidonius identified this principle with the sun, the heart of the world. It was the source of light and warmth, of the earth's vital breath.

But wherever the Stoics might locate the cosmic Reason, they were unanimous in asserting that it was the source of all things in the world conditioning both their form or structure and their corporeality. All the multiplicity of the world sprang from the Cosmic Reason, because that Reason contained a number of "seed-logoi" (λόγοι σπερματικοί), out of which plants and animals and all other things developed (Marcus Aurelius, IV, 36). Matter devoid of qualities became qualified matter through the action of a seed-logos or a group of them.

L. Stein in his *Die Psychologie der Stoa* explains that by a seed-logos the Stoics meant an activity of the pure pneuma which by means of tension invited and encouraged rational and purposive origination and development.[3] As usual with the Stoics, we have here a case of an indissoluble unity between the ideal and the corporeal being; the seed-logos is an organic bodily whole, a pneuma with such a tension that taking possession of lifeless matter it gives it shape and forms an individual entity. Such an individual entity may perish, but its seed-logos is indestructible: it goes on forming

[1] See Reinhardt, *Posidonius*, p. 142.

[2] See L. Stein, *Die Psychologie der Stoa*, v. I, pp. 32, 90; *Simpl. Sch. in Arist. Categ.*, ed. Brandis, p. 74.

[3] L. Stein, *Die Psychologie der Stoa*, I, p. 49.

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new individuals of the same species, being, as it were, the spirit of the genus.[1] The world, united and interpenetrated by the Divine Logos, aspects of which—the seed-logoi—are to be found in each individual thing, is one living whole. "If the olive-tree," says Zeno, "produced melodiously playing flutes, you would have no doubt that it knew something about flute-playing. If plane-trees produced rhythmically sounding lyres, you would also admit that plane-trees were musical. Why not admit, then, that the world is a living and rational being, since it produces animate and rational entities?" (I, 112 and the whole of 110–114). Chrysippus and Posidonius also recognize that "the world is a rational, animated, and thinking entity" (II, 633–645). All parts of the world are therefore united with one another through sympathy and correlation. Plotinus, whose system in this respect is similar to that of the Stoics, says about the world: "This One-all is a sympathetic total and stands as one living being; the far is near; it happens as in one animal with its separate parts: talon, horn, finger, and any other member are not continuous, and yet are effectively near; intermediate parts feel nothing but at a distant point the local experience is known" (Enneads, IV, 4, § 32, translated by S. Mackenna).

The world as a whole, the heavenly bodies and the earth are living beings. Their parts are subservient to one another, and the whole, and, *vice versa*, the whole is subservient to the parts. Thus, according to Posidonius, the earth "feeds" the plants: "in the countries where there is no rain she secures for them the due amount of moisture by means of floods, such, for instance, as we find in the case of the Nile, the Euphrates, the Ind; in flood-time the Ind not merely moistens the soil but sows it with seeds of plants."[2] Causality and teleology are not mutually exclusive; the Stoics conceive of the divine cosmic Reason on the one hand as a universal law, a strictly necessary causal bond, and on the other as purposive, rational, and beneficial Providence. In the words of Zeno, "necessity is the moving power of matter; it always remains equal to itself, and may also be called Providence or Nature" (I, 176). "The universal law which is right Reason (ὁ ὀρθος λόγος), penetrating all things, is identical with Zeus, who directs the world-order (I, 162).

Chrysippus also identified the law of nature—"the eternal, coherent, and ordered motion" with cosmic Reason or Providence (II, 913, 916).

And so, according to the Stoics, the necessary is at the same time the logical and the purposive; the causal process is teleological and rational. Consequently, the world as a whole is the most perfect being (I, 111), "it is arranged as excellently as the best-governed

[1] Proclus, *Commentary on Plato's Parmenides*, v. V, p. 135.
[2] Reinhardt, *Kosmos und Sympathie*, pp. 110, 170, 176.

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State." To obey the laws and to carry out the purposes of this State is man's highest good and supreme duty. "Lead me, Zeus and Fate, wherever it is destined by you that I should go, and I will follow unfailingly; but if I tried to lag behind like a coward, I should be compelled to go against my will," says Cleanthes (I, 527). "*Ducunt volentem fata, nolentem trahunt,*" writes Seneca (Epistles 107, 10).

Having considered the main conceptions of the Stoic philosophy, let us ask whether the usual interpretation of it as materialism is correct. E. Zeller asserts that their doctrine is materialism, but, in contradistinction to that of Democritus, it is *dynamic* materialism. For Democritus, bodies consist of impenetrably hard atoms which ever remain what they are; the world process consists in the blind, soulless movement of these atoms in space and of their accidental and purposeless impacts. For the Stoics, on the contrary, corporeality consists in *activity*; space is filled through tension, *i.e.* through the processes of attraction and repulsion. These processes are not soulless or irrational: they are based upon the sympathy between the different parts of the world and are rational and purposive. We find thus an indissoluble connection between extended corporeal existence, psychical states ("sympathy"), and ideal or spiritual essence expressed by the notion of νοῦς (Reason), Logos, and λόγοι σπερματικοί.

In order to say whether this doctrine is materialism we must see how it accounts for the relation between the psycho-spiritual and the bodily reality. It must be observed that a theory should be only called materialistic if it implies that the psychic and the spiritual is a passive derivative from the physical. But for the Stoics the psychic state of sympathy is that which *directs* the bodily processes; similarly, the ideal aspect of the Divine pneuma designated by the word Logos conditions from the first the necessary and purposive order of physical processes, and is not produced by the latter. This clearly shows that Stoicism is not materialism; it is a *dynamic* view according to which everywhere in the world there is activity, tension, striving towards a definite rational purpose—namely, towards the realization of physical being embodying rational principles.

The doctrine of the Stoics seems materialistic because they overemphasize the contention that all ideal and psychical being has a bodily aspect. But this assertion does not, as such, commit us to materialism: the fact that spiritual and psychic entities have a physical embodiment actually enhances their value and significance for the world, and in no way affects their essential nature. Thus, for instance, when our awareness of a humorous situation finds expression in a smile, it acquires, through that bodily manifestation, a greater fulness of reality, while preserving its psychic and spiritual content.

The fundamental principle of Stoic metaphysic is not substance

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but force, δύναμις. This is clearly the case with Posidonius, as Reinhardt has shown. He discovers special forces in all departments of the world; thus he speaks of the force of thought, the force of life, etc. Reinhardt shows that the basis of the world for Posidonius is a living *Primoforce*, the manifestations of which give rise to physical and psychical being. In the terminology of W. Stern, author of the remarkable book *Person und Sache*, force is for Posidonius a meta-psycho-physical principle, *i.e.* it transcends the distinction between the psychical and the physical.

The ancient Stoics emphasized this supremacy of the active principle over substance or corporeality. It has already been said that for Zeno the ultimate reality was to be found not in elements but in "principles" (ἀρχαί) which were in no sense material. "Two principles lie at the root of all things, an active and a passive one. The passive is the unqualified substance or matter (ὕλη), and the active principle in it is Logos, or God. Being eternal, the Logos forms all individual things out of matter" (I, 85). "Principles (ἀρχαί) are to be distinguished from elements," says Chrysippus; "principles do not come into being or perish, whereas elements perish in a cosmic conflagration. Principles are incorporeal and have no shape, whereas elements have shape" (II, 299). Substance, then (*i.e.* the elements—fire, air, water, and earth) is, for the Stoics, derivative; as to "first matter" (ὕλη), they meant by it neither the atoms of Democritus nor what we now mean by matter; it was not the visible and tangible matter given in experience, but an indefinite passive principle, the subject for the activities of the Logos. This alone is sufficient to show that the Stoic metaphysic is not materialism. They insist on everything being corporeal, not because corporeality is for them an ultimate principle, but because they interpret it as the *actualization of the spirit*. As Aall puts it in his *Geschichte der Logosidee in der griechischen Philosophie*, the active principle, the living force is for them the Logos, but it is through physical activity that Logos acquires ontological actuality.

The metaphysic of the Stoics may then be called *pansomatism*, not in the sense of asserting that bodies alone exist, but in the sense that everything actual has a bodily as well as a psycho-spiritual aspect, and these two aspects are inseparable and cannot exist apart.

Such a view may appear as materialism to a superficial observer, and the misapprehension can only be avoided if the ideal (spiritual), the psychical, and the bodily aspects of a real entity be carefully distinguished from one another, designated by exact terms and shown to be separable in thought, though not in reality. The Stoics failed to do this, or, rather, in trying to do it they perpetually spoiled the results by committing the mistake of "duplication in abstraction,"

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be founded on observation alone, for the simple reason that we cannot observe the unobserved. If we are to have any science, or indeed any rational action at all, it seems necessary to assume some principle according to which events are so connected that we are justified in supposing that under conditions similar in all relevant respects similar events will occur. I am aware that this is only a loose and crude way of stating the principle, but to define its exact logical form must be the end of a long investigation, not the beginning; all that we know at present is that science must assume some principle or other of this kind, though there may be much dispute as to its exact nature, and that such a principle cannot be derived from observation alone. If we assume that every physical event is caused (I am not discussing psychological causation here, so as to avoid complicating the issue by the introduction of the free-will controversy), we have such a principle, for it obviously follows from this that the same cause will always produce the same effect, since otherwise there would be no cause to account for a difference. By "cause" we need only mean here a set of events so connected with another set that it is legitimate to infer that, if the first set occurs, the second will occur also. This gives us at least part of the popular meaning of cause. Cause usually means more than this, but it means this at least; and this is much the most important part of its meaning for science. As a matter of fact, even those thinkers who attack the notion of cause do not mean to deny it in this sense. (Even Hume himself apparently believed in causality in this minimum sense, although he insisted that the belief could not be defended or justified, but was quite irrational.) We may have to deny real forces or a rational logical nexus behind causation, but we must accept the concept I have defined, whether we call it cause or not, if we are to have any inference from one event to another. We cannot indeed discover particular causes or causal laws except with the help of experience, but to discover them at all we must assume that there is some cause; we only discover them by first assuming that there is a cause of the event or kind of events which requires explanation, and then eliminating by observation those events which cannot be the cause.

Now it may be that we shall find even this much incapable of proof. The principle may have to be regarded as self-evident, or again it may have to be taken as a postulate that we can assume to be true for practical purposes in the hope that experience will continue to verify it. Possibly we may be driven to say something of this kind, and surprisingly little attempt has been made by recent philosophers to give a proof of the principle; but, apart from any objections which may be urged against the two alternatives suggested, it would be of great theoretical interest if a fundamental

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principle like this could be proved. And, if it is to be proved at all, philosophy must "do the proving." No special science can prove it, for it is presupposed in all the special sciences.

Now a proof of the principle of causation in the sense I have given was formulated by Kant, but unfortunately this proof, as he expressly says, only holds good if we assume a form of idealism which makes the physical world in space and time nothing but appearances to human minds. To condense the argument "into a nutshell," Kant's main point is this. He assumed, according to his general system of philosophy, that all events in space and time are only the appearances to us of a totally unknown reality, and therefore only exist as they appear to us, *i.e.* only as *our perceptions*, and pointed out that *our perceptions* are always necessarily determined, *i.e.* we can choose whether we shall look, but if we look we cannot choose what we shall see. Therefore physical events, being only our perceptions, are determined necessarily in their order, and so universally subject to causation. This proof is on principle valid for the subjective idealist,[1] provided we are using "causation" only in the sense defined. But it would not impress the realist in the least, for what he desires to know is not whether our perceptions are determined, but whether physical events are. So we need a proof that would also satisfy the realist, the man who holds that the physical objects in space with which we have to do are not mere appearances or ideas in the percipient's mind, but exist and have spatial properties independently of being perceived.

Now I am very averse from labelling myself as either a realist or an idealist, but I will say this—I cannot bring myself to believe that there are not real physical things in space which exist even when nobody is perceiving them; I cannot identify them with our perceptions and leave outside our experience either nothing at all or an unknowable thing-in-itself as is done by Kant. I cannot do so, partly, I confess, because I cannot shake myself altogether free from the vice of common sense even at the command of metaphysical theories, but partly also because, if we admit unperceived physical objects in space, we can render our experience much more coherent,

[1] I mean here by subjective idealism the view that we must not assume the existence of objects in space except as human perceptions, the reality which causes these perceptions being held to be either mental or totally unknowable, so that all our propositions about physical objects have sense only if they are interpreted as being merely statements about our perceptions. In that case Kant's argument, as it stands, proves causality, in the sense of necessary determination, for physical objects, since it proves it for perceptions, and physical objects (*i.e.* objects in space) are in that case only our perceptions or systems of our perceptions. But it does not prove it for the "realist," since the latter holds that physical objects exist quite independently of our perceiving them.

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much more of a system, give a much more scientific explanation of it than if we do not.[1] And, if that is not a reason for believing in the physical world, I do not know what is; there can be no better reason for preferring any one scientific theory to any other. If we refuse to apply that criterion, the theory of Thales, the first physicist, that everything is water has as much claim to our credence as the most up-to-date and the best-established conclusions of modern science. If we believe in physical objects in space, we can account for our experience partially; if we do not, we give up trying to account for it at all. It is therefore very important to develop a proof of causality that will satisfy the realist as well as the idealist, and if we follow out Kant's suggestions along a road somewhat different from that adopted by himself, I think it can be done. While no philosopher would dream of asking the scientist to stop using the principle of causality till he had proved it for him—the very idea is sufficient to arouse ridicule—yet it is not too much to hope that scientists may show some interest in a philosophical examination of the foundations on which their whole subject depends. After all, philosophy cannot give a proof of causality without in some way or other affecting the conception of causality, and who knows how a change in this conception may ultimately affect the working of science?

Well, now, can we give a proof of causality? Of course we in practice all believe it already; but a real proof of it would surely be of value as directly and indirectly adding to our understanding of reality. I am not trying to prove any mystical conception of real force, but only that connection which is presupposed in the possibility of inferring the future from the past. Without some such connection between events, any talk of laws of nature would become meaningless. In every attempt to account for anything the connection is presupposed, for when we ask what the cause of an event is, we assume that it has some cause. Now I think it is possible, whether we hold a realist or an idealist view about the physical world, to show that causality is presupposed in any sort of conception of physical objects, that without it the simplest judgment of everyday life and the most "Einsteinian" judgment of science would be alike impossible. The main lines of the proof are indeed the logical consequence of certain suggestions of Kant himself, though he did not see that they could also be applied by the realist.

In order to show this we must ask how we form the conception

[1] This is not intended to prejudge the question whether the physical world, though independent of our minds as finite, is ultimately dependent on Mind, and is not therefore inconsistent with many forms of "idealism." Nor is it meant that physical objects are very like what we in our unsophisticated moments take them to be.

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of physical objects at all. Surely only by correlating data in a system. Anything that is a possible object of thought to us has several different qualities and relations, and we can only think these together by thinking them as members of the same system. Now a purely mathematical system that had no immediate application to events in time would not imply causality, but, since physical science is always concerned with something in time, it has to form a system of what occurs in time (or "space-time," if you prefer it; it does not make any difference to the argument). Whatever else the conception of a physical object may involve, it must involve that at least, namely a system of relations, qualities, states in time. But is this possible unless the different elements in the system are throughout united by causality? A system implies necessary connection between its members, and necessary connection between different events in time is causality, at least in the sense defined, this being the only sense in which it is needed by science. This does not give us causality in its full sense, perhaps, but it is at any rate a very important thing to prove, for this necessary connection is presupposed in any scientific inference and any conception of laws of nature. Why are we justified in presupposing it? Because without it we could make no judgment whatever about physical objects or events. For we can only form a conception of anything physical at all by combining different data into a system. But, in order to combine them into a system, we must connect them by laws, and these must be causal laws since the events combined occur in time. Here the realist and idealist should agree, only, while the idealist will say that the physical object is nothing but a system of experiences connected by laws, the realist will suppose that some of the qualities revealed in these experiences are there quite independently of our minds in the real, external physical world. But, if the realist denies that a physical object is only a system of *experiences*, he must assert that it is a system of *physical states*. Both views involve equally the idea of system. We cannot escape this conclusion either by denying or by asserting the existence of an independent physical world, because if we assert it we must assert it as a system, if we deny it we must admit that all our judgments assert or imply not indeed independent physical objects but systems of elements in our experience. (For, unless the idealist is going to make all our judgments about the physical world totally meaningless, he must substitute for the conception of independent physical objects the conception of systems of laws uniting our different experiences.)

To make what is meant clearer, let us take an instance. We think of a fire as now burning and then in a few hours reduced to ashes, and the conception of a physical fire is introduced to combine and account for both these events; without combining these or similar

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data we should never arrive at a physical fire at all, whether in the realist sense of the term or the idealist. But could it connect these data, these facts, if the state of the fire now were not causally connected with the ashes that will take its place in a few hours' time? *Without causality* there would be no link between the two events, we could not use them both to form the conception of one fire; the thought of a physical object would be totally futile, since it could neither explain our perceptions in any sense nor connect them with each other in a system. There could be no evidence for the existence of physical objects when not perceived, nor any ascribing to them of qualities perceived or unperceived.

But you may cry out that all the while I have been dealing only with the effete common-sense view of matter and not with the view maintained by modern science. The world as viewed by modern science is not a world of separate substances, and in it the every-day conception of a physical object plays little part. For science, it will be said, matter means not the ordinary perceptible qualities but mathematical concepts like mass or energy. Yet, whatever the ramifications of physical science and whatever its final conclusions, we may defy it to produce any conception of matter that does not involve from the beginning the idea of a causal system. Why, the terms mass and energy themselves mean causal laws if they mean anything! Any conception of matter which science can develop must involve a system of causal laws connecting the data which it is meant to explain, otherwise we can know nothing about it whatever. This is involved whether we conceive matter in the crude "brickbat" way of the plain man, to use a phrase of Dr. Whitehead's, or in the more subtle, mathematical, "relativistic" way of the modern physicist. Either the scientist can assign no qualities or relations to matter at all, or he must think of matter as a system of qualities and relations in time, and so as involving causality. He denies separate physical substances—but why? Because there is such a close causal connection between different objects that we cannot regard them as independent. He thinks of matter in terms of force, and even suggests that matter is reducible to force—but why? Because the most fundamental thing he can conceive about matter is causality.

By the causality that I have tried to prove I only mean the principle that every physical event is determined by, follows from something else in the universe. Many scientists and philosophers, while admitting this in some sense of the words, would refuse to admit "necessity." There are some who regard "necessity" as a mere metaphysical superstition without either real meaning or practical utility. But even they would admit that we can infer the future from the past, and how could we do that unless future events were logically implied by past events, and therefore followed from

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them necessarily? Inference on our part can only be justified if the facts in reality which we take as our premises *imply* those which we infer from them. It is true that we can never make causal inferences with certainty, because we do not know all the conditions, but we could not make them at all if there were not some logical connection between cause and effect. We cannot see the necessity of the connection ourselves, for we cannot see *why* the laws of nature hold good, only *that* they hold good; but, if we did not assume the presence of the necessity, we should not be justified in making any causal inference at all. We could not use the laws of motion to infer future events or to discover the causes of past events unless we assumed not only that the laws of motion have held good in all *observed* cases, but that they will hold good in the future and held good for unobserved cases in the past. But the only possible foundation of this is the supposition of a necessary connection revealed to us indeed by experience, but really following logically from the nature of things. From the mere fact that something has constantly happened in the past we cannot infer that it will be any more likely to happen in the future under similar conditions if we do not assume that there is something in the nature of the conditions which implies that the event must follow on them. This forces us to admit the presence of a genuine logical nexus not only in our thought but in reality. There must, after all, be something in the cause which connects it with the effect so that it could not be itself logically coherent unless followed by the effect, so that it requires the latter for its own completion, so that it necessitates it. Those who deny all logical connection in reality and only assert it in our thought forget that in order validly to infer B from A we must suppose that A logically implies B, and that is what I mean by causal necessity. The proof given does not establish causality in its full popular sense in which the past is thought of as, so to speak, compelling future events by something analogous to human will, but it establishes causality in the sense of a necessary connection between all events. This is the only sense in which causality is needed for science, but in this sense at least it is no metaphysical figment, but is really true and really needed.

Another point where I may have given offence, and for which, indeed, I may deserve criticism, is my use of phraseology which may be regarded as implying that there is *one* definite cause to be found for every effect. I do not, of course, believe this. I quite recognize that if you include in cause, as you logically ought, all the events that influence any other and on which its occurrence partially depends, you can hardly stop short of the whole universe. I also recognize that cause and effect are part of one continuous process, and that there is no sharp gap between them in nature, so that we

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can say, "Here the cause stops and the effect begins." But, wherever we draw the line between cause and effect for our practical or scientific purposes, or even if we draw no line at all, it still remains true that there is a necessary connection between past and future, between the earlier and the later stages of the continuous process of which I spoke. It also remains true that, though every event is, directly or indirectly, connected by causality with every other, the connection is not equally important in all cases, that some events are more closely connected than others. In the popular sense of the term, cause really means not the only cause but the chief cause; and if we did not recognize that some causes are more influential than others in producing a given effect, science would be in as bad a state as if we gave up causality altogether, because it cannot go through all the events that ever have happened in order to determine the cause and predict the effect. It must rule out the majority of events and conditions as irrelevant, at least comparatively, in determining this particular cause: in predicting the position of a piece of matter in this room, it cannot and need not take into account, *e.g.* the kind of breakfast the Prime Minister of Australia has been eating. What I have been trying to prove, however, is simply that everything is determined by something else. In speaking of this determination we are forced rather arbitrarily to split the continuous process of nature into separate stages, as though there were a sharp gap between them, calling the one cause and the other effect. This falsifies our data somewhat, and does some injustice to reality, but no more than is done by any of our thought or speech, because all thought and speech involve a sharp abstraction, a drawing of clear-cut lines across what is really continuous. And the truth remains, if the argument of this article be right, that there is always a real necessary connection which we imperfectly express in this manner.

In reducing causality to necessary connection we must add the words "in time," and we must not forget the difference between the necessary connection in time which is causality and a non-temporal, purely logical necessity. In particular there seems to be a certain peculiar irreversibility about causality. We can infer the cause from the effect as well as the effect from the cause, but we cannot conceive the effect as producing the cause, only the cause as producing the effect. This suggests that there is something more in causality than the necessary connection which has been discussed here, but at any rate there is that necessary connection, and that is the factor which is of importance for science.

We have now what seems a proof of causality in the sense that every event must necessarily depend on something else in the universe besides itself, but we need not suppose that therefore all causality is necessarily of the same type as that commonly recog-

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nized in physics. The problem forces itself upon us in connection with human freedom, which many people would regard as destroyed by the assumption of universal causality. With this fear I do not agree; we have indeed a perfect right to assume that freedom is a fact in any sense of the word in which it is really a necessary presupposition of moral action, but we must not assume too hastily that freedom in that sense means absence of causality. I for my part feel that it is quite as hard to reconcile moral responsibility with indeterminism as with determinism, though I have not here tried to establish causality for the moral as well as for the physical world; and I prefer to think that the solution lies in the development of a better conception of causality rather than a denial of it. Now the only conception of causality which can do justice to human freedom is a "non-mechanical" one. Hence the importance of the issue between the mechanists and their opponents in sciences like biology. If a non-mechanical conception of causality can be vindicated in the case of animal bodies, it will *a fortiori* hold in the case of the human mind, and a great battle for the cause of freedom will be won. It is true that, even if all physical causation could be explained mechanically, it would not necessarily prove that the same kind of causality was paramount in the human mind, so that, even if the battle is decided in favour of mechanism in that sphere, it will not necessarily endanger human freedom; but if the opposite occurs, and mechanism fails even in the physical sphere, it will provide a striking, though indirect, vindication of freedom. For, if non-mechanical causality must be admitted in biology, there can be no further obstacle to admitting it in the human mind. Whether this mechanical conception is adequate in biology or not must be left to biologists to decide, but it is a contest that will be watched with interest by the philosopher.

All that I shall now try to do is to outline tentatively my idea of one of the possible meanings of non-mechanical as opposed to mechanical[1] causality, and try to vindicate the possibility, if not the adequacy, of such a conception. The point I wish to make is this: The dicta that every change must have a cause, and that everything happens according to the laws of nature, taken literally, imply that for every event another event or set of events can be found with which a connection can be established such that every item in the effect is connected with every item in the cause by a necessary law. Thus the ideal causal explanation of an event, X, is obtained

[1] I do not mean by "mechanical causality' only causality explicable by the laws of motion, but am referring to any view which anticipates the explanation of everything by causal laws in the sense expressed in this paragraph, whether it relies entirely on physical or also admits, in human life, psychological causes.

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when it is split up into its component elements A, B, C, D, E, and each connected with some precedent fact in such a way that we have the relation—if F then A, if G then B, etc. I do not mean by A, B, C, etc., separate events, but rather facts about an event, *e.g.* the distance traversed by a body in a certain time. X could only be explained completely by causal laws if its whole nature could be expressed in a set of facts like this, and each of these facts connected with some preceding fact from which it would follow by a causal law. This is the ideal of causal explanation where facts render the attainment of such an ideal, at least apparently, possible.

But, if this ideal is universalized, some very serious assumptions must be made. In the first place it must be assumed that the nature of everything is completely analysable into a set of isolated facts, each of these facts being expressible fully by means of universals, including numerical terms. For it is only between universals that there can be a scientific law. It involves saying that all particulars, all individual things, are reducible entirely and without residue to a set of universals. It also involves saying that the degree of any quality they possess is capable of being accurately numbered mathematically. This may be true of the physical world *if* its only qualities are the primary spatial ones; but it is difficult to see how it can be true of the mind as an object of scientific psychology or perhaps even of organisms. And in regard to the inanimate physical world, too, we must admit that, even if we can only know its primary spatial qualities, and even if it is true of these, we cannot assume that it is necessarily true of inanimate objects in respect of their whole nature or all their qualities. The assumption cannot be made by anyone who supposes that a whole may be more than a mere aggregate of parts, or an individual being more than a mere system of universals. Mechanical causality implies that every whole can be explained as the result of the mere interaction of its parts; it further implies that everything in the world is reducible altogether and absolutely to universals and numerical expressions; and are these assumptions so unquestionable after all? Unless they are true, it does not follow that, because everything is necessarily determined, it is therefore susceptible of complete explanation by causal laws. Unless these assumptions are true, causality need not and cannot be in all cases mere mechanism.

Further, the advocate of complete mechanism must assume not only that everything is reducible to a set of facts capable of being stated in universals and numerical terms, but that each of these facts is completely isolable from the other facts that make up the individual whole which has been split into fragments. It presupposes not only that any individual whole, X, is completely reducible to a set of facts, A, B, C, D, E, but also that A, B, C, D, and E can be

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isolated from the whole which they make up and from each other sufficiently for us to say, if F then A, if G then B, whatever happens to the other factors of X, whether they are all present or none at all. If we cannot isolate them in this way, if the whole makes a difference to its parts such that they are not the same in the whole as when treated in isolation, then we cannot explain each one separately by means of causal laws stated irrespective of the others and the scheme of complete causal explanation by laws again breaks down. That *every* whole makes such a difference to its parts has been maintained by many philosophers, and that *some* do it is not altogether easy to deny. Again, the assumption of mechanism is, to put it in the mildest way, a by no means self-evident one. I am not here trying to disprove the mechanistic conception, but simply to show that it involves assumptions which are far from unquestionable, and that we must not conclude straightway that, if causality is universal, everything can be explained mechanically. It may still very possibly be true that science can only work *in so far as* our experience can be explained by mechanical causality, but this does not prove that a complete explanation of it could ever be given by that means. Such a conclusion would not prevent the scientific explanation by mechanism being the best available for us and being true as far as it goes.

One of the issues of importance for philosophy that biology will have to decide in the future is whether everything physical in a living organism can be explained by the ordinary physical laws of motion, another is whether biology can be satisfied with a conception of causality like that which has been used with such success in physics, or whether it must introduce the conception of a real whole that is not explained by the mere interaction of a sum of parts, if it is to work at all. It may be that the conception is necessary for philosophy, but not necessary or useful for science, because mechanical causality provides the only way we have of explaining anything, though it will never explain everything; or it may be that new non-mechanical working conceptions are required for some of the natural sciences, especially biology and physiology; but even if the issue in this sphere is decided in favour of the mechanist, it does not necessarily follow that mechanism is the whole truth. For it may be that it is entitled to be the exclusive working method of science, not because everything can be explained by it, but because it is the only method of explanation available for us.

But what conception of causality can we have at all if not the one just discussed? How can we say that everything is causally determined if everything is not to be explained by causal laws? Such a non-mechanical conception of causality is difficult for us to form because all our thinking involves the kind of separation of what

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is really inseparable, the kind of atomism of thought, that expresses itself in mechanical causality. Because we cannot deal with the whole at once, we have to abstract, and we know that our abstractions are to a large extent valid because they work, because they make the world fairly coherent, because they are verified by experience. But this does not prove that they are altogether valid without qualification, that they are completely adequate to reality, and it need not prevent us recognizing that the whole is more than the sum of our abstractions. If it is more, we cannot from the nature of the case describe adequately what it is, since we can only describe it by means of abstractions. But though we may not be able to describe its nature fully, we know by experience, by acquaintance, what it is to deal with an individual thing, and we must remember that, since the world consists of individual things, causality is not only a relation between universals but a relation between individuals. It is individual events that causality determines. To a large extent that determination may be expressed in terms of universals, but unless all individuals can be reduced wholly and without residue to universals, causality is itself not wholly reducible to universal laws, and must in the last resort be thought of as a necessary connection between individuals. This would not be strange, for the things that make up the world are all individuals, but it goes against our normal way of thinking because we can only give a scientific account of things in so far as we introduce universals. But the events we explain or partially explain in that way are individual, and if they are completely determined by causality, either they are wholly reducible to universals, or causality is not simply a relation between universals. So I feel myself inclined to the heterodox view of a necessary connection between individuals, not wholly reducible to universal laws. In that case it would be false to say that everything can be explained by causal laws, and yet true that everything is necessarily determined by something else in the universe, for causal laws imply universals, but the real events that are determined and determine are individual, not merely universals. Causality would in that case be the fact that one individual situation determined or helped to determine another, a fact which could be partly but not wholly reduced to the universal laws dealt with in science, just as, for example, in a great work of literature the harmony between a character and his acts which we feel so strongly cannot be reduced wholly to a set of psychological laws. In such a conception of causality we may, I think, also find a key to the solution of the problem of human freedom, but I have not time to go into the matter now.

It is difficult to say whether causality is more important for practical life, for science, or for metaphysics. Without it all our

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purposes would be thwarted, for we could never predict the consequences of a given action or discover the means to a given end; without it all system in science would disappear, and there would be nothing left but a mere compilation of particular facts; without it everything would be a chaos bereft even of the semblance of unity. Modern thought is inclined to emphasize change and denounce preceding systems as static; but for that very reason it surely ought to interest itself in causality, which is essentially the category of change. It may be that in the flux causality is the one bond of unity, the one thing that remains unchanged, and for that very reason absolutely indispensable wherever we have to deal with change.

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FREEDOM AND DETERMINISM

B. M. LAING, M.A., D.Litt.

I

The question which I am to raise for discussion is one which has long been debated by philosophers, and consequently I consider it doubtful whether anything very new can be said on the matter. But it may be profitable to review once more the present position of the controversy and to have in mind the reasons which at present make the question of interest and of importance.

The question whether the individual human being is morally free did not trouble ancient thinkers very much. It arose and became acute in the modern period, and man's interest in it coincided with, and was prompted by, the great modern scientific movement. The scientific idea that caused the trouble was that of universal causation or the reign of universal law. It was felt that, as continued investigations revealed the ever-widening presence of causal law in physical nature, it was highly probable that human nature would, on investigation, reveal likewise the presence of causal law. This belief is shown in Hume's contention[1] that "in the production and conduct of the passions there is a certain regular mechanism which is susceptible of as accurate a disquisition as the laws of motion, optics, hydrostatics, or any part of natural philosophy."

Hume's attitude was not by any means general. It was bound up too closely with his characteristic philosophical ideas, which were strange to his generation and were slow in gaining acceptance. One of the main factors which long affected and even now affects the scientific study of human nature is the radical distinction drawn by Descartes between mind and matter, mind and body. The essence of man was mind, and the essence of mind was thought or reason. Mind was united to a body; but body and its union with mind were, relatively to the nature of mind itself, accidents, and were not of the essence of man. By means of this theory—for it must be noticed that the radical distinction between mind and body is a theory, though it is too readily supposed to be a fact—Descartes left the way open for the treatment of the body on the lines of a mechanism.

What I wish to draw attention to here is that, first, the question of freedom was affected and is even now affected by a supposed

[1] *Dissertation on the Passions, finis.*

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distinction between mind and matter; and, secondly, the question came to be discussed in terms of what has come to be spoken of as "mechanical causation." The history of metaphysical speculation showed a tendency to challenge the sharp and clear distinction between mind and body, and the result has been that either the mind has come to be regarded as a product of external or material factors (as by the French Aufklärung and by the materialism of the middle of the nineteenth century), or, where the mind has been considered an entity distinct from the body, yet it has been maintained that it is an entity to which the idea of causal law is applicable.

The development of sciences like physiology, biology, and psychology has complicated the question; and, by seemingly giving much support to determinism, they have given a new significance to the problem of freedom. Physiology stresses the close dependence of "mind" on a nervous system, of the functioning of mind upon the state of certain glands, and upon factors such as health, diet, temperature, and so on. Biology tends to stress either the idea of a hereditary endowment or else the influence of environment. Psychology insists that the individual is largely "a social product," or that individuals vary in intelligence and emotional life, and hence must be tested in order that an explanation of their behaviour may be found, or that every conscious and outwardly visible characteristic is causally determined by some factor in the Unconscious, or that man is endowed with a fundamental set of instincts, which in McDougall's words "are the prime movers of all activity."

While these developments seem to give support to determinism, an attack, on the other hand, has been made on the idea of mechanical causation and mechanical law. The controversy of freedom versus determinism was for long carried on under the influence of a conception of natural law moulded by a special kind of science, generally spoken of as mechanics. The picture present to the imagination was that of the impact of bodies in motion. This conception naturally was difficult of application to the mind, which, perforce, had to be represented as a kind of ghostly body. So long as the controversy was carried on under these conditions, it simply degenerated into an assertion or denial that the mind could be so represented. The later developments of science demanded a re-formulation of the nature of a scientific law. In the interests of freedom, it was maintained[1] that physical laws have not that rigidity which the mechanical view assigned to them, but are to be regarded as of the nature of statistical averages. A natural law is a formulation based upon, and applicable to, a number of entities taken in bulk; and it does

[1] *E.g.* by James Ward.

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as Luppe has well called it. The mistake may be explained as follows: Suppose that AB is an actually indivisible whole; the task of correct abstraction is mentally to separate A from B; if AB is a concrete whole of perception, the abstracted elements A and B cannot be imagined pictorially, but may only be objects of conceptual thought. Minds that are not good at abstraction will find the task too difficult, and in trying to think of A will still picture it as Ab, and instead of thinking of B, will have a presentation of aB. Thus abstraction will yield not the elements of AB, but a reduplication of it. Thus, for instance, if we perceive a red cube and want to think of its colour and extendedness in abstraction from each other, we generally set about it incorrectly, imagining the colour as, say, a red patch and the extendedness as a cube or some other visual shape filled with colour or with some other sensible quality. A correctly performed process of abstraction, however, ought to yield two elements of reality—colour and extension—that cannot be visualized at all, but can only be thought of conceptually. Distorting A by the addition of B, and B by the addition of A, we learn nothing about the specific nature of either.

It is precisely this mistake of duplicating through abstraction that the Stoics are always making. Their intellectual intuition enables them to differentiate from the world-whole the rational supertemporal and superspatial principle, Logos, but they immediately proceed to sink it in the material element of fire; they no sooner think of the ideal aspect of force than they convert it into centrifugal and centripetal currents, and so on. Let us consider, for instance, in greater detail their doctrine of the seed-logoi. The Stoics certainly conceived of them as supertemporal and superspatial elements—present in the extended material being, after the manner of Aristotle's "forms." Thus, in the first place, the seed-logoi are indestructible; material being, on the other hand, is destructible because it is infinitely divisible, and can always be destroyed through division; besides, it is continually undergoing profound qualitative changes: fire is turning into air, water, earth, and back again. In the second place, definite seed-logoi condition the rational purposive structure of every species of animals and plants, and, indeed, of every individual entity. When a creature such as, *e.g.*, an eagle dies, the seed logos corresponding to it does not die, but conditions the birth of a new eagle with the same rational and purposive structure of the body. This can only be the case if the seed-logos does not merely fill the material bulk of the eagle's body, but is an ideal superspatial unity which governs a number of material particles in space *dynamically*, *i.e.* by manifesting its force in many points of space.

According to a dynamistic theory of matter, spatial manifesta-

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tions of the seed-logos confer upon it an aspect of materiality, but it is not the fact of the seed-logos being extended in space that enables it to play the leading part in the process of building up and governing the body of an eagle; it can only do so in virtue of its superspatial character, which enables it to dominate many points in space. The Stoics were apparently aware of the ideal character of the seed-logos's wholeness, but they identified it with its corporeal aspect and talked of the seed-logos penetrating bodily the whole bulk of an individual thing and holding it together as a unity. Criticizing this view, Proclus pointedly remarks that if seed-logoi are corporeal, they cannot combine the parts of a thing, for in that case they cannot hold even themselves together. Proclus, a follower of Plotinus, and a man highly endowed with the faculty of intellectual intuition, clearly perceived that spatial unity is only possible if it springs from a superspatial source.

Both the seed-logoi and the World Logos are materialized by the Stoics. They know the spiritual aspect of the Logos, but in speaking of it they immediately translate it into terms of space and material fire which bodily interpenetrates the world. The crudeness of their mistake consists not in their ascribing corporeality to a divine principle, but in not clearly distinguishing the spiritual and the bodily aspects of it, their specific qualities and significance. They reason as though the actual interpenetration of the world by a homogeneous pneuma could make the world into a single whole. But as against this one can only repeat once more the argument of Proclus: such a pneuma, occupying a number of points in space, can itself be a single whole only if its wholeness springs from an ideal supertemporal and superspatial source which combines all its "tensions" into an inseverable unity.

The ideal source of the wholeness of an individual thing or event is complex, and two kinds of ideal entities must be distinguished in it: the concretely ideal element or the substantival agent, and the abstract ideas, that is, the laws and forms of that agent's manifestations.

The consideration of any concrete fact will show that many elements, both real and ideal, form part of its structure. Suppose a singer is beautifully rendering an exquisite musical melody: his movements, the sounds of his voice, and his mental states constitute the real aspects of this process; they are events in space and time. But the supertemporal and superspatial reality is present here as well, first, as the singer's self which dominates all this multitude of events in space and time; secondly, as the abstract form of the events, their regular structure, and so on; finally, the melody itself exists not merely as an event in time, but also as an ideal supertemporal whole, and in order to render it intelligently the singer

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must have in mind the pattern of it as a unity of elements mutually determining one another.

The Stoics did not carefully distinguish these various aspects of reality; their analysis was not sufficiently thorough, and they committed endless mistakes of reduplication. This lack of subtlety—a characteristic defect of their system—may have had some connection with the fact that many of the leading Stoics were not Greek by birth. The fundamental mistake of their metaphysic may be expressed as follows: in preaching dynamic pansomatism they failed to see the difference between asserting that "every entity is a body" and that "every entity produces physical reactions, though it transcends them and is not exhausted by them."

I have dwelt at such length upon these peculiarities of Stoicism because they are highly instructive. We find that most materialists are guilty of the same mistake. They unconsciously ascribe ideal characteristics to matter, and, unable mentally to differentiate them, are perfectly content with their inchoate or at any rate unanalysed conception of matter, finding in it all they need for the interpretation of the world. This, for instance, is the case with Robinet, a French thinker of the eighteenth century, or with Priestley (1733–1804), and, indeed, with all thinkers who conceive of the world as a mechanism in which psychical processes are subordinated to the physical, and yet admit that the world has been created by God. The elements of the world mechanism are in their view so wisely co-ordinated that natural mechanical processes lead to highly purposive and rational results. Such thinkers do not really deny the ideal foundations of the world of existence, but interpret them as God's ideas in accordance with which the world has been created. They forget that every ideal principle exemplified in a real existent is indissolubly connected with that existent, so that if one takes into account all the elements that go to the make up of any concrete existing entity, such an entity will always prove to be both real and ideal.

I will point out in conclusion that the overwhelming majority of naturalists, even when they do not reduce the world to mechanical processes, fall into the same error as soon as they come to deal with problems of philosophy. In their own sphere they easily differentiate the various aspects of an object with the greatest exactitude, expressing them in notions admirably fitted for the purpose. But as soon as they go beyond their own special field and turn to philosophical problems that require the utmost refinement of analysis, their mental subtlety seems to forsake them; the ideal and the real aspects of existence blend for them into one undifferentiated mass, and can no longer be distinguished.

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THE BASIS OF POLITICS: ARISTOTLE AND THE SCIENTISTS

G. BARRACLOUGH

THERE is so much truth in the conception of the state as a natural organism and of man as a political animal, as commonly contrasted with the various theories of the state as an artificial formation based on contract, or implied contract, that Aristotle's proposition is rarely criticized from any other standpoint. When Aristotle said that man was a political animal, that is that political life was his nature, and consequently that the state, as the ultimate development of his nature, was a natural institution, or, as we should say, an organism, he was, we may say with a good deal of certainty, speaking in the light of this contrast. But his theory must be judged on its own merits, and not on the demerits of that which he was attacking. We may grant that the state is natural; but we may nevertheless mean by "natural" something other than Aristotle means. And if our conception of Nature is different from his, it will follow that our agreement about the state is one of words only.

Aristotle in his treatise on Physics uses the word "Nature" in three ways. It is (1) "The primary material which is the substratum of all things possessing in themselves an impulse towards movement." (2) "Nature, when the name is applied in the sense of development, is the path towards nature," in the sense of form. (3) "Nature is form"—that is End, or, as he says, full development.[1] "For what each thing is when fully developed we call its nature, whether we are speaking of a man, a horse, or a family." It is important, however, to see that these three conceptions are really one. What differentiates Aristotle's first conception, that of Nature as primary matter, from the ordinary scientific theory, is that he postulates in the material "an impulse towards movement." Nature is really this immanent energy. When he conceives of Nature as End, Aristotle is in fact saying that this immanent energy has worked itself out. And here again he differs from the scientists, who regard Nature simply as Process: he limits the process by an object.

We can see immediately the position to which this difference must lead us in the conception of the state. Modern theory would assert

[1] E. Barker, *Plato and Aristotle*, 221; *Physics*, 193, *a*, 28; 193, *b*, 12; 193, *a*, 30.

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that man produces the state as a means—possible so far the best as to be the only means, but a means nevertheless—for the satisfaction of certain primary needs. What Aristotle asserts is that man does not produce the state as a means to satisfy his needs, but that the primary needs are the stirrings in him of that immanent end or idea which is expressed in the state. A great deal therefore depends on whether we can accept the conception of an End. It is, of course, a conception characteristic of Aristotle's philosophy. His view concerning the state can be paralleled in more than one direction. "Animals," he says for example, "are not constructed as they are because they have developed as they have; they have developed as they have in order to attain the construction which they show."[1] Diversities of development, it follows—despite Aristotle's vigorous renunciation of Platonic uniformity[2]—are not natural.

To what, then, does this point in the theory of the state? Aristotle takes up his position with great and characteristic caution. His first object is to set down what he sees; only then, to theorize. He will not let his theories run away with him, and it is hard to pin him down to a definite opinion on an abstract question. But occasionally we find he makes such a statement as this: that "in the order of nature everyone would take his turn" of office in the state.[3] When he has said this, we cannot but suppose that the governments in which this is not so, governments which he characterizes as "defective and perverted forms," tyrannies, oligarchies, ochlocracies, are not natural. In a sense, Nature is in them. At least, it has been in them and may still be in them; but it has been vanquished. The 'immanent energy' cannot 'move' that in which it resides as it would wish to move it.[4] 'Nature,' as Aristotle confesses in another context, 'would like' to do things which it cannot do. In these, as in other, perverted forms it lies a prisoner. Only a fear, for which it would be difficult to find a satisfactory logical basis, prevents him from saying, "Away with these perverted forms, these frustrations of Nature, these barriers to the End." This fear—that the unnatural unknown of a stateless world may be worse than the unnatural known[5]—induces him to allow a Nature whose criterion is End to continue somehow travelling in a vehicle

[1] *De Gen. Animal*, 778, *b*, 1–5.

[2] *Politics*, ii. 2.

[3] *Ibid.*, iii. 6.

[4] *Ibid.*, iii. 17: "There is no such justice or expediency in a tyranny, or in any other perverted form of government, which comes into being contrary to nature."

[5] *Ibid.*, v. 9: "Oligarchy or democracy although a departure from the most perfect form, may yet be a good enough government, but if anyone attempts to push the principles of either to an extreme, he will begin by spoiling the government and end by having none at all."

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which refuses to journey to that End. Apart from these considerations, however, Aristotle's view is sufficiently clear. Though he may limit it in one way or another, it nevertheless remains his governing principle that perverted forms are not natural. This principle is indeed forced upon him by his belief in an End.

Modern criticism would say that Aristotle's conception does not give sufficient scope to, even if it does not altogether deny, the action of environment in the formation of such states. We think of the physical motion or the internal development of a body, whether a body natural or a body politic, as a process of tangency, the result of the pressure of other bodies. We think of the nature of anything as stamped with the aspects of other things, an infinitude of other things, which it reflects. It is in fact no more than the function of unification of a plurality of things which are other than itself, not only the things which form a contemporaneous environment, but aspects inherited from its own past. But with each new environment there is an evolution of the old entities into new forms.[1] It is this development in accordance with environment, internal and external, which we oppose to the Aristotelian conception of development in accordance with End. Aristotle allows environment some action, but he holds it to be inessential. To us development in accordance with environment is Nature, and so we hold all development to be natural. In this way we cannot admit the Aristotelian conception of the Perverted State, for a perverted state, in his phraseology, is one in which environment has made an unnatural modification. But what falls to the ground is not Aristotle's classification of states (which is, after all, only methodological), but the idea which forces him to deny that all development, whether it results in monarchy or tyranny, in democracy or ochlocracy, is natural: that is, the idea of End.

But the Aristotelian conception of Nature as energy directed towards an end has greater consequences in his and subsequent political theory than that of leading to a classification of states which modern developments in thought are forced to dispute. The introduction of the idea of End into political science forces a reconciliation of ethics and politics, necessitates a discrimination between good and bad states—for the discrimination between natural and perverted is nothing but this—but it also necessitates a new ethic for the individual. For if the state expresses the immanent end of man, if it alone allows the unimpeded activity of the moral and intellectual faculties of the citizen, if it is only in it that the "limit of perfect self-sufficiency" can be reached, it is clearly logically prior to the individual. The individual, when isolated, is not self-sufficing. He is, as Aristotle says, like a part in relation to the whole,

[1] A. N. Whitehead, *Science and the Modern World* (1926 edition), 150, 210,

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and the whole is necessarily prior to the part. Man is therefore but the first stage in a process of which the state is the conclusion. Both the individual and the state have one end, and the individual can in fact have no end apart from the state. This is one of the fundamental propositions of the Aristotelian doctrine; but, as Aristotle himself was well aware, in spite of its logical completeness, it is not without serious practical difficulties. He admits, in the first place, that the ordinary citizen does not live on his own initiative a life of reason. In his case virtue lies in habitual obedience to the commands of the state. But Aristotle has elsewhere postulated that the virtue of the good man resides in a faculty for conscious self-guidance, and so we must conclude that the virtue of the good man differs from the virtue of the good citizen. There can also be no doubt that for Aristotle the state definitely meant the association of all the citizens, and the virtue of the state must therefore be the virtue of all its citizens. Inasmuch, therefore, as the virtue of the citizen differs from that of the individual will there be a discrepancy between the virtue, or morality, of the individual and that of the state. This is a serious blow to the orthodox Aristotelian theory, that man *qua* man, *i.e.* natural man = citizen. Compelled to own a difference between man and citizen, Aristotle has to leave his primary thesis; and what he does is to descend to the ready view that the state is not *the* scheme of the world, *i.e.* the End, but merely one of the schemes. And thus the hypothesis, at first so unique, that man derives his being from the state, comes in the end to mean only this: "that in acting as members of a group, men are conditioned by the place they occupy in the group, and by the character of the group to which they belong; and conditioned in this way, their virtue must fall short of the 'absolute' virtue of full and free self-direction towards an ideal end, which belongs to the good man who acts simply and absolutely without such limitations." [1] This is the modification which becomes necessary when Aristotle, having postulated that man can only act and be understood as a member of a group, then admits that a virtue can belong to man acting *in vacuo* and apart from membership of a group.

This modification is so fundamental that it justifies us in seeking a new rationale of the Aristotelian proposition, *humanitas = civitas*. For if this conception is to be made the fundamental hypothesis of political science, as it has been made and as its obvious value entitles it to be made, it is essential that it be extricated from the old Idealist doctrine, untenable as has been shown in its original Aristotelian form, and equally, if not increasingly, vulnerable as developed by Green, Bosanquet, and Ritchie. It must be set out in such a way as to solve or obviate the difficulties, inconsistencies

[1] E. Barker, *Plato and Aristotle*, 291.

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and falsifications, which hitherto have been involved in it, and which undoubtedly have destroyed much of its value. How then shall it be set out? Aristotle's own difficulties suggest a solution. Wishing to prove that man's nature is to be a citizen, that apart from the state man is scarcely human, Aristotle cannot ignore the unavoidable conclusion of his observations, that man is unsocial,[1] a "solitary, poor, nasty, brutish being." Wishing to prove that man's actions, and particularly his moral actions, are, and should be, dependent on the actions of the state, he is unable to dispose satisfactorily of the old Cynic premiss, that man is an independent moral agent. Everywhere he is met by two opposing sets of ideas, and between these he tries, irresolutely, to choose. We must try rather to reconcile the two schemes. For this, it is indispensable to replace the idea of the simplicity of Nature by an acknowledgment of its complexity. Aristotle himself seems to have developed his conception of Nature as a protest against the false simplicity of the distinction, drawn by the Cynics, and again in the eighteenth century, between man and Nature. But he substituted for this the simple conception of man and Nature as one indivisible organism. There is an alternative. We can conceive of man as having two ends, even though the duality of our conception conceals a vital unity. We can conceive of him (1) as an organism in himself; and (2) as a function of other organisms, in fact of an infinitude of other organisms, just as these other organisms are functions of him, and all are functions of a greater organism, which is in turn a function of them.[2] The matter is not difficult. We can think of a number, say 5, *qua* 5; but we can also think of it as a function of something else, *e.g.* 10, 15, 25, that is as $5 \times \ldots$ But our first prehension is of a combination of these two aspects, and it is only when we are compelled to define our prehension that we abstract it into two ideas. So in our first prehension of man we see man both as an individual and man in relation to other men, and to the body of men; and it is only by the abstraction of conscious thought that we derive therefrom the two seemingly contradictory conceptions of man and Nature. Pushed to extremes, the one results in the Cynics, the other in Aristotle. "External institutions are obstructions, all social interests are distractions," says Diogenes. "He who by nature . . . is without a state, is either above humanity or below it," says Aristotle.

[1] *Politics*, ii. 5: "The evils now existing in states, suits about contracts, convictions for perjury, flatteries of rich men and the like . . . are said to arise out of the possession of private property. These evils, however, are due to a very different cause—the wickedness of human nature."

[2] Ideas, strikingly developed by A. N. Whitehead, *Science and the Modern World*, in regard to natural science, are here applied to politics.

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Nature itself combines the Aristotelian and the Cynic abstractions. Either the Cynic or the Aristotelian conception of Nature must therefore, by what it excludes, contain a radical error. But the immeasurable complication of nature makes it impossible for us to comprehend it synthetically in entirety. We can only know through abstraction, that is, falsification. And it is therefore no valid condemnation of a general conception, such as Aristotle's conception of Nature, that it omits some facets of the truth. What, however, does invalidate it is that it does not recognize, and therefore does not allow for, the omissions. Aristotle is, on coming down to practical considerations, forced to admit the existence of the individual *qua* individual; but in theory he regards the individual as non-existent (*qua* individual) because he has chosen to omit him from his abstraction. It may be doubted if any conception of Nature which cannot admit the object as itself is a sound basis on which to build a scientific theory of the state. It is not difficult to conceive of a Theory of Nature which will allow individualization and yet maintain substantial dependence, and it is on such a theory of nature that political science must be built. But, just as this Nature is not Nature in the Aristotelian sense, so the political theory is not Aristotelian political theory. For if man has a certain individuality apart from the state, it is no longer possible to see his end in the end of the state. It is, indeed, no longer possible to see any one End at all. Each object has its own course of development, conditioned by an environment unique to itself: what is good for one may be bad for the other; what is bad for one may be good for another—and this, no matter "whether we are speaking," in the words of Aristotle, "of a man, a horse, of a family," or a state. The conception itself of End is alien to modern scientific ideas, and the conception of Environment has usurped its dominant position.

But if the conception of End is dismissed from political science, there goes with it the close Aristotelian interrelation of Ethics and Politics. This divorce makes possible a new standpoint. The state loses its moral character; we see it again as a means produced by man to satisfy certain primary needs. But morality does not lose its social colour, for in the composition of man, and consequently in the morality which is an emanation of his spirit, social factors play at least as important a part as individual.[1] There is, at any rate, a combination of both aspects. Instead of the old antagonism, which could only be solved by making the social absorb the individual as

[1] Whitehead, 151: "An individual entity, whose life-history is a part within the life-history of some larger, deeper, more complete pattern, is liable to have aspects of that larger pattern dominating its own being, and to experience modifications of that larger pattern reflected in itself as modifications of its own being."

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its opponent, or the individual create the social as its agent, the two harmonize as aspects of a greater and comprehensive whole. If this harmony[1] is a fact—and experience and observation both support the contention—we have provided a new and fuller basis on which to develop a theory of the relations of the individual and the state.

[1] Harmony is perhaps too strong a word. The whole problem of Authority arises out of the fact that at times there can be notable discord. But, as Sir Paul Vinogradoff has pointed out in a strictly historical context, co-operation is so indispensably the counterpart of conflict as almost to contain it. See Vinogradoff, *Oxford Studies in Social and Legal History*, VI. vii.

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THE IMPORTANCE OF BEING CONSCIOUS

PROFESSOR EDGAR SHEFFIELD BRIGHTMAN

SOME of the time we are conscious. But we are a very small part of the universe, and consciousness, so it seems, is a very small part of us. Yet that very small part is the starting-point of all knowledge and the field in which all our experience occurs.

The foregoing paragraph seems to the present writer manifest and unassailable truth, yet some of its statements and many inferences which may be drawn from it are doubted by numerous philosophers. One might almost say that the bone of contention in all philosophy is the importance of consciousness.

As soon as we begin to think, the natural tendency of the mind is to concern itself with what we call objects. Man faces a world with which he must come to terms, in which he must live, and which he must modify in certain ways if he is to survive. Hence he understood fishing and hunting, agriculture and warfare, much better than at first he understood his mind. Thought, philosophers say, turns to the object. Thus Thales explained everything in terms of water, Democritus in terms of atoms, and modern American neo-realists in terms of neutral entities. Consciousness, in such systems of thought, may have importance of a kind, but it is not central importance. On the other hand, many philosophers have felt that the nature of consciousness conditions the very possibility of all knowledge about objects, and that knowledge about consciousness is a precondition of knowledge about objects other than consciousness. The movement in modern philosophy from Descartes and Locke through Hegel and Schopenhauer was an increasing emphasis on the importance of consciousness. Underlying the whole movement was the principle which Schopenhauer called Descartes's great truth, namely, that "the only fact that is actually and unconditionally given is self-consciousness."

But fashions in philosophy, as in everything else, experience change, as indeed they must if mind has a dialectical structure at all like what Hegel attributed to it. If thought is to be comprehensive and balanced, it must test all the possibilities. Every conceivable hypothesis should be thought out and criticized. The variety of philosophical ideas is ample witness that this is being done. And so thought experienced a change about the middle of the nineteenth century away from theories that attach high importance to consciousness in the direction of theories which minimize

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its importance, that is, there was a swing from idealism toward realism, which took many forms. This swing has continued, and, in certain respects, increased down to the present time, although the idealistic movement has never died out, and is now showing numerous signs of revival. Yet it cannot revive, and would not deserve to, unless it could meet the arguments of those who regard consciousness as of minor importance. It is the aim of the present paper to consider some of these arguments.

The effect of evolutionary theory has been in the direction of the subordination of consciousness, and that for various reasons. The theory of evolution regards consciousness from the point of view of its survival value. For it consciousness is one of the manifestations of life whose function it is to assure the survival of the organism. Only so much consciousness is needed as will aid in that survival. Moreover, it is the tendency of consciousness to make itself unnecessary, that is, to turn over its functions to habit. When one is learning to ride a bicycle, one is painfully conscious of one's effort to keep the biological organism out of danger and moving smoothly on its way; after one has learned, the feet whirl around and the hands guide the machine without any conscious thought, unless there is an unusual amount of traffic in the road, or an incalculable hen or human being is pursuing a devious course in the vicinity. The goal of evolution would apparently be attained when all possible adjustments have become habitual and the organism responds directly to every stimulus without any intervening consciousness.

From another point of view evolution testifies to the unimportance of consciousness. The human mind is a very late product. Even the lowest forms of consciousness must have been preceded by long geological ages in which there were no conscious beings on this earth. Moreover, in the development of every organism, automatic acts, reflexes, and unconscious habits precede conscious processes. It would appear, then, that evolution assigns consciousness a transient place between one set of unconscious adjustments and another higher set of unconscious adjustments. Consciousness seems to be a biological instrument devised to meet a temporary need, and cast aside when that need has been met.

From the standpoint of psychology, also, consciousness is being put in its place, and that place a lowly one. It seems ironical to call psychology a science of consciousness. At least two tendencies which differ widely in other respects agree on this point. I refer to Freudianism and Watsonian behaviourism. The former finds the phenomena of consciousness interesting not for their own sakes, but for the sake of the subconscious complexes and desires of which they are the effects. For Freud, consciousness is like a Punch and Judy

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show. The characters appear to act and have voices and adventures of their own; but the real action, the only real voice is that of the master of the show, who pulls the strings. Consciousness has no life or meaning of its own. It is but the symbol of suppressed desires, which are the true efficient causes. This point of view is not merely a matter of Freudian theory, but in some instances at least is an undoubted fact. Cases of suggestion during hypnosis are illustrations. A hypnotized subject may be told to appear to-morrow at noon in front of his house and announce his wife's death, although he is not even married. At the time suggested he will perform the act without knowing the true reason for it. His consciousness is the obedient slave of his subconscious memory.

Likewise Watsonian behaviourism is another instance, and an even-more flagrant one, of the recession of consciousness. Starting from the fact that all study of the minds of others must be by a study of the behaviour of their bodily organisms, Professor Watson has arrived at his famous characteristic doctrine that consciousness is behaviour. This is equivalent to saying that what has been supposed to be consciousness does not exist at all, and that what have been supposed to be the effects of consciousness on behaviour are really all that there is. The devastating influence of this theory on the importance of consciousness is obvious.

Similar in its effects to the theories just discussed is the observation derived from both psychology and biology, that unconscious purpose often reaches its ends more directly than conscious purpose. Instinct may sometimes be more successful than reason. The unconscious roots of a tree seek and find nourishment in remote places more skilfully than some human beings are able to find food with all the advantages of conscious intelligence.

The unimportance of consciousness which seems to follow from the foregoing observations is embodied in one form or another in various philosophical systems. Many modern forms of realism, especially the doctrines of the American neo-realists, explain consciousness as a relation among entities which themselves are wholly unconscious. All views which regard consciousness as a product of the nervous system or as a relation between the organism and the environment agree with realism in holding to the metaphysical unimportance of consciousness. It is manifestly true that realistic views may regard consciousness as of ethical or social importance, or may attach other high significance to it. But realism is far from assigning to consciousness the central position which it occupied in the great idealist tradition.

The concept of experience in the thought of Professor John Dewey is another illustration of the point. For Mr. Dewey, experience is not "momentary, private and psychical," but it is everything

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that happens to a human being, including its context and its history. This enlarged conception of experience as essentially including "the whole wide universe of fact and dream, of event, act, desire, fancy and meanings, valid or invalid," is set in explicit contrast with consciousness. The former is pervasive; the latter is "that which appears qualitatively and focally at a particular moment." All of our explanations and experiments must occur in the larger world of experience, not merely in the narrow field of consciousness. Thus, for Dewey, the psychical and conscious is a relatively narrow and unimportant fragment of experience.

Not alone realism and pragmatism, but also idealism, in some of its forms, deprecates consciousness. Even Bergson, for whom consciousness is the very nature of the *élan vital*, shares in the opinion referred to above that unconscious purpose is superior to conscious purpose, and he therefore opposes the philosophy of finalism. Furthermore, it is characteristic of an important tendency in contemporary idealism to repudiate mentalism, the theory that all reality is of the nature of consciousness, and to substitute for it a conception of wholeness or individuality as the essence both of mind and of the world. An idealism which eliminates consciousness from its first principles is not too easy to distinguish from realism. No wonder that Bosanquet wrote of "The Meeting of Extremes in Contemporary Philosophy." Much of modern philosophy, therefore, is, in a very real sense, like that of von Hartmann, a "Philosophie des Unbewussten"—a philosophy of the unconscious.

In the presence of all these facts and authorities consciousness has become painfully self-conscious. By this time it must be feeling both embarrassed and insignificant. It still has vitality enough left to resist its utter annihilation by Watsonians; but it seems to have won a victory without peace. The mood of the present is to grant the existence of conscious awareness, but to deny it a place in the sun. The child is a legitimate one, but is cut off without a penny.

Such a situation is calculated both to arouse curiosity and to stimulate sporting instincts. The impartial observer wants to know why consciousness must be assigned a position so radically different from its position of supremacy in the great classical period of modern philosophy, and wants to understand whether the change in emphasis is as justifiable as it is historically intelligible.

We have put the case against the importance of consciousness in the light of recent thought. In fairness, let us now consider what may be said on the opposite side. We have found that the subconscious and the unconscious, the physiological, the evolutionary, and the physical, all join in pointing to realms beyond the tiny spark of conscious awareness. That there are objects beyond my consciousness and yours is a truism. If this be not granted, no

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sense can be made of consciousness itself. Nevertheless there is another truth which is overlooked by many, namely, the truth that all of the facts on which we base abnormal psychology, biology, physics, and every other science, are facts that are found in the despised and "unimportant" consciousness. There may be suppressed desires, but unless there is some anomaly of conscious experience there is no reason for inferring that there are suppressed desires. There are facts which may be described as unconscious purpose, but knowledge of those facts must be found in someone's conscious experience, and must be interpreted in some relation to conscious purpose. There may have been and certainly was a pre-human past of the evolutionary process; but all the evidence which we have for asserting that past is to be found in the facts and structure of our present conscious experiences of time, of life, and of traces of past life in the present (see the paper by E. A. Burtt in the *Proceedings of the Sixth International Congress of Philosophy*). No one doubts that there are physical things, whatever the metaphysical truth about them may be; but a sane reason for that belief is found neither in divine revelation nor in some sort of absolute knowledge or instinct that assures us of the existence of those things. Such a reason is to be found solely in the conscious rational interpretation of the conscious facts of sensation and memory. It may be, as professors of astronomy assure us, that man is an infinitesimal speck on a planet in a solar system which is itself one member of a sidereal universe that is only one of many such universes, the rest of which are invisible to man. All of those universes, however, are known to exist for the sole reason that the facts of the conscious experiences of astronomers, their conscious imagination and reason, lead the astronomers to a conscious belief in the immense stretches of space occupied by vast celestial bodies.

One may go much further and offer as a valid generalization the principle: All immediate facts are facts of consciousness, and all theories are conscious processes. Every possible statement about any possible object is a conscious act, and the evidence which leads us to conclude that the object does or does not exist is always evidence to be found in consciousness.

In order to set this view into sharp contrast with certain contemporary views (which we are not going to discuss in detail), let it be said that the self is the datum and all thinking is elaboration of the datum by itself. In this formula the self means the complex field of consciousness as a whole, as it exists at any specious present; this view is further discussed in a recent book by the present author.[1] When I say, "I see a rose," the immediate fact is conscious perception plus a strong belief that something not my experience is being

[1] *A Philosophy of Ideals* (New York: Holt, 1928).

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"perceived." But both the perception and the belief are my conscious experiences. I am not at all convinced by those realists who would make "the rose itself" a part of my consciousness; in any case, their theory is itself a conscious belief, the validity of which depends on an appeal to the facts and thoughts of minds and not to roses, as they are independent of mind. In the last instance, then, all facts and theories—hence all assertions about other persons and a real world, all sciences and all errors—are conscious experience, and are no more valid than is consciousness. The self is the datum, and the self is the final court of appeal. It is the Alpha and the Omega of all assertions about everything that lies beyond it. It is the fact to be interpreted, and it is the judge of the interpretation.

There may be some who will doubt the conclusions about facts which have just been stated, although I do not see how they can do it. No one can appeal to data of which he is unconscious. But, however it may stand with facts, there is no doubt that all values are, as T. H. Green says, "relative to value for, of, or in a person." There are, of course, many kinds and degrees of value—sensuous and ideal, false and true—but all kinds are alike in being some sort of satisfaction in conscious experience. It may be true that certain values ought to be experienced, even though no one actually experiences them; but the "ought" is a law of consciousness and the unexperienced "value" is no value at all—that is, no satisfaction—until it is consciously realized. An unrealized "value," if known, is an ideal; and the known ideal is also a conscious experience, although lacking the content and richness of value. The physical existence of "The Last Supper" is not beautiful; beauty resides in the æsthetic satisfaction of the conscious observer. If the painting itself is called beautiful, it is only because we see in it the expression of a mind satisfied with its harmony. Hence the existence of beauty in nature leads us to regard nature as the embodiment or expression of a conscious mind.

Implied in the foregoing, but requiring explicit statement, is the fact that reason itself is a conscious process. We are told that there is subconscious reasoning, and that much of our thinking goes on in that subterranean darkness. Doubtless this is true, as many experiences testify. But the subconscious thinking is of no importance to us whatever until its results emerge into consciousness and are tested by the waking reason of conscious daylight. The importance of normal, conscious reason has rarely been more cogently stated in recent times than by Professor Ralph Barton Perry in his presidential address before the American Philosophical Association in 1920, entitled "The Appeal to Reason."

If, then, all facts, all theories, all values, and all reason, reside

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ultimately in consciousness, it would appear that consciousness has rescued itself from its position of unimportance. But it is conceivable that a determined opponent of the thesis here defended might argue that consciousness may be "hoist with his own petard." Let all the facts, he might say, be found in consciousness; let all theories and values and reason be conscious processes. It still remains possible that these facts and theories may lead consciousness to infer its own inconsequence and impotence. That is, the causes of consciousness may be discovered to lie wholly without and beyond itself, in which case it might be again reduced to its position of unimportance. Is consciousness, then, wholly a product of physiological forces, present and past? This question is too large and involves too many metaphysical problems to be discussed at length in this connection. But the present inquiry suggests at least one reply. If, from the point of view of causation, consciousness is wholly a product and not at all a producer, then this principle applies equally to all of consciousness, including the processes which lead us to assert physiological and physical causation. Now, either those assertions are true because they are consciously reasonable inferences from consciously observed facts, or else conscious reasoning and observation is irrelevant to their truth. But if there is no genuine causation within consciousness, the fact that they seem reasonable to consciousness is of no importance at all. Everything in consciousness is a product of physiological processes, and there can be no real control by judgment or thought. Hence the view which denies causal significance to consciousness destroys itself. No one supposes that consciousness causes its own existence or contents; but unless there is some causal control of judgment and choice from within consciousness, we are reduced to incoherent scepticism.

Professor A. N. Whitehead has recently said that "every particular actual thing lays upon the universe the obligation of conforming to it." Of no "actual thing," we may venture to suggest, is Professor Whitehead's true assertion truer than of consciousness.

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THEORIES OF SCIENCE

PROFESSOR L. J. RUSSELL.

I

I NOTED two directions in which the scientific worker is seeking to advance. He is trying to give a more complete account of the actual detail of what is happening, and he is seeking wider and wider generalizations. As an observer, he must note what he observes, and, it would seem, omit nothing. But in seeking generalizations he must select, from among the features he observes, only those which he takes to be of general significance. Thence arises at least the appearance of a conflict in his activities. If he is too intent on the details of what he observes, his generalizations suffer; but if he leaves aside details too readily, his generalizations suffer equally. There is danger both in omitting and in not omitting.

It is clear that mistakes are made in both ways. Every new theoretical advance is the result of an insight into characteristic structure previously hidden from view by too obvious detail. Again, every new modification of an old generalization is the result of bringing into prominence details hitherto left unstressed. Science swings between the general and the detailed.

II

To the investigator himself, both aspects are ever present, and he is in no danger of forgetting either. Facts may spoil his generalizations, or his generalizations light up new facts. In reporting progress, he stresses now specific features, now general laws. He is neither an abstract theorizer nor a mere arduous collector of detail. But to the theorizer about science, watching the investigator at work, examining the body of doctrine that results from co-operative investigation, the position is rather different. The problem confronting him is not the practical one of how to derive generalizations from facts while keeping close to them, but rather the theoretical one of how these two sides of the situation are to be thought of in relation to one another. And as a preliminary to this he has to distinguish them as clearly as he can, to seize each in its peculiar nature, in separation from the other, if that is possible.

While then the practical scientist is busy trying to discover new generalizations and new facts, the theorist about science is busy asking, what is a generalization, and how it is possible for facts, all

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of which are apparently individual, and therefore different, to be dealt with at all relevantly by means of generalizations, which apparently have reference not to this or that particular case, but to any or all cases of a general kind?

To this question there are two opposite answers. One is, that generalizations are possible because it is only on the surface that particular cases differ; below the surface are to be found certain real features that they have in common; and generalizations express these real common features. The opposite answer is, that generalizations are not in any literal sense statements about what is to be found in particular cases, but that they are merely convenient ways of putting us into touch with particular cases. We can divide the various theories of science into two main groups, according as they give the first or the second answer.

Let us start with the theories which consider that there is something really common to all situations that can be brought under the same generalization. This something may be thought of as directly embodied in something material, or it may be thought of as not having any direct material counterpart.

(i) One theory holds that behind all the variety displayed by similar events there are certain actual material objects with common properties, *i.e.* behaving in exactly the same way so long as they are in the same circumstances. These objects, variously disposed, produce various effects. No two pieces of coal, for example, are exactly alike, but they contain elements, such as atoms of carbon, which are exactly alike in the sense that if you interchanged any two carbon atoms anywhere, no difference whatever could be detected. The similarities in events result from the presence of similar elements of this type; differences between similar events result from the variety in the dispositions of such elements. The purpose of science, on this view, is to penetrate behind the diversity to the underlying common objects. Atomism, and the various forms of materialism, are expressions of this view; for though atomism need not suppose that there are any two atoms exactly alike, yet it does suppose that the stuff of which atoms are made is everywhere alike.

(ii) A second theory holds that while there is something common actually existing in all situations that fall under the same generalization, this real common existent does not give rise to or exist as any direct similarity of material elements, but exists in a more complex way. Underlying the diversity of similar events there are certain common entities actually present in things, which are the cause why the various things behave in similar ways, differences in behaviour being due to accidental circumstances present in the particular cases. These common entities are apprehensible by thought

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alone, and have the kind of existence appropriate to what can only be apprehended by thought. The purpose of science is to distinguish the essential from the accidental characters present in things. This view, starting with the early Greek theory of Forms, developed in the hands of Plato and Aristotle into the classical theory of rational causation, contemporaneously with the development of the early form of Atomism. Both the Atomist and the Formal view then agreed that the general or common was to be found in something actually existing in things; they disagreed on the question what this actually existing common element was. In one sense the atomists, in another sense the formalists, were more abstract: the atomists, in making a sharp separation between the primary qualities of shape, position, and motion, and the secondary qualities of colour, taste, smell, etc.; the formalists, in paying more attention to the superficial resemblances between things, and less attention to the actual processes within things.

III

If on the other side you stress the diversity in things, and insist that there is in actual existence nothing corresponding to the common or the general, you get an entirely different view of the object of science. Here again we may note two main types of view.

(iii) You may take your denial of anything common with complete literalness, in which case you will insist that generality is an affair of names, depending on the fact that various things are sufficiently similar for the same name to be able to be applied to them in practice. "Similarity" here means nothing more than that in things which fits in with the partial vagueness of words: what is referred to is the practical fact that a word (*e.g.* sheep) can come to denote any one of a limited set of objects, without danger of denoting any object beyond this set. General propositions are then possible because of the partial vagueness of words and the similarities between things. Generalizations on this view become not statements of actual fact, nor even approximations to actual fact in any strict sense, but simply instruments for indicating what is to be looked for in any one of a limited set of situations. Generalizations on this view cannot even be called abstractions, for you can only "abstract" something which is there to be abstracted; and on this view there is nothing common to be abstracted.

(iv) There is, however, a development of this view, which is similar to the view already mentioned in stressing the diversity of things, but which allows justification for speaking of general laws as abstractions, or again as approximations.

This view holds that while there are no strictly common elements

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in diverse occurrences, yet it is possible to mark out conventional frames of reference, involving number, space, and time, which can be used in relation to all occurrences, in the sense that statements can be made relating occurrences in various ways to these frames of reference, and that from statements relating occurrences to these frames of reference in one set of ways, other statements can by general processes of reasoning be deduced, which relate occurrences to the frames of reference in other sets of ways. The number system is an elementary instance of a frame of reference. If I have a heap of stones, I can relate them to the number system, and so describe them as twelve in number; having so described them, I can as the result of arithmetical reasoning describe them as three times four, or as twice six, or as seven plus five in number, etc. Similarly, if I describe a ship as running 27 knots due east for 24 hours a day, I can describe it as having run 648 sea miles due east in the day.

Such descriptions, relating occurrences to a common frame of reference, are in terms of the frame of reference, and not just in terms of what is actually occurring. They prove to be extremely convenient in actual practice. Leaving aside here the question as to the theoretical question of what a frame of reference is, and the practical question as to the actual methods by which we refer an occurrence to a frame of reference, we can see that it often happens that while circumstances prevent us from referring occurrences directly to our frames of reference in the way in which we want them, they permit us to make this reference in a way which we do not happen to want, but which enables us to deduce the reference in the way which we do want. If, *e.g.*, I want to know the position of a ship at a certain hour (thus referring the ship to my space-time reference frame), I may not be able to discover this directly, but may know at what speed she has sailed in a given direction, since I knew her position at a previous hour. I do not want this information directly, but together with the general propositions I know about my frame of reference, it enables me by deduction to refer the ship to my frame of reference in the way in which I do want it.

We have here an exceedingly useful process, making use of two sorts of proposition. The one sort consists of statements, either particular or general, referring actual occurrences to our frames of reference. The speed of this ship is 27 knots due east. Water contracts on cooling from 100° to 4° C., and expands from 4° C. to 0° C. The other sort consists of statements enabling us to make passages between various ways of referring to our frames of reference: $3 \times 4 = 12$. The sum of the interior angles of a Euclidean triangle is 180°. A body moving under no Newtonian forces will continue to move with uniform speed in a straight line. And so on.

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Both sorts of statement present an interesting field of problems to the logician. Both sorts can in a legitimate sense, which we shall have to consider later, be described as abstract. Those of the second type, dealing entirely with the frames of reference, are abstract and exact; those of the first type, relating occurrences to the frames of reference, may be exact and abstract (as when I say that there are 12 stones) or approximate and abstract (as when I say that a ship is 600 feet long).

As physics advances, such frames of reference come to be widened and made more complex, and capable of application to more and more occurrences; and statements which had previously passed for statements about occurrences come to be seen to be merely involved forms of statement about the frames of reference themselves. (Newton's law of gravitation is a statement of this kind.) And this serves to give prominence to the importance of such frames of reference, and of statements relating actual occurrences to such frames of reference, in scientific investigation.

We can on this view describe the function of science as the devising of frames of reference to which it is practically and theoretically convenient to refer occurrences, the investigation of the theoretical properties of these frames of reference, and the description of occurrences in terms of them.

IV

We have here four types of theory, two of which regard science as an attempt to discover the common nature of things, while two regard it as a means of getting into touch with things in their diversity. I have stated them in the order in which they arose in the history of thought. They can be symbolized by the atom, the essence, the name, and the frame of reference. The first two are explanatory theories, the last two descriptive. For our purposes there is no need to stress the distinction between the two descriptive theories, so that we can speak of three main types.

On the whole, the prevailing view is that science is descriptive and abstract. There are many reasons for this.

(i) The formalist view has never recovered from the blow it received in the seventeenth century. It rested on a trust in "forms" or "essences" which could not be apprehended by the senses. These essences had to be grasped by reason; only their effects on bodily movements and changes could be preceived. And the basis of modern science was an unwillingness to accept anything which could not be followed out in its workings through space and time. Further, the formalist view put a greater trust in reasoning than experimental science was willing to accept. Plato had shown conclusively

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that changes in space and time could not be adequately dealt with by reason. He had used this to show that changes of things in space and time did not belong to the highest reality, his principle being that only what is completely intelligible is completely real. But when greater stress came to be laid on the actual world in space and time, what Plato had shown was interpreted in a new way. Plato and Hume are agreed on the fact; but for Hume it involves a relative condemnation of reason. Thenceforward not reason, but actuality, becomes the test of reality. Out of touch with the senses, the human mind wanders away from the real. Experimental science by its success gradually made this principle basic. Kant gave a philosophical interpretation to it in his own way; but the principle made its way independently of Kant or of his interpretation. And it effectively destroyed any possibility of a widespread trust in substantial forms apprehended by reason and not accessible to sense.

(ii) The principle which hindered the acceptance of formalism was in the end to make against atomism. For atoms by their very definition are inaccessible to the senses. They possess only such qualities as hardness, shape, and motion; and quite apart from the difficulty of seeing how a concourse of such objects could generate perception of colours and sounds, tastes and smells, it is obvious that atoms are too much creations of reason, and too little accessible to the senses, to be able to withstand the criticism of the empiricists. But atomism only died as a theory; for just at the time when this criticism might have been expected to have its full effect, viz. in the early part of the nineteenth century, the hypothesis of atoms began to prove more useful than ever before in correlating the observed facts of chemical combination. It was, in fact, atomism which helped chemistry to become a science. But the cautious attitude of Dalton himself towards "atoms" is significant. To him they were a mere way of representing the facts. The experimental facts were for him fundamental.

We have here an illustration of a very interesting point, which throws a curious light on the general acceptance of the descriptive view of science. Side by side with an unwillingness to trust reason out of touch with what can be actually observed has gone an increasing power on the part of reason, by the construction of hypothetical entities, to link what can be observed in one way or place with what can be observed in another way or place, and an increasing dependence of the scientist on what reason tells him is likely to have happened or to be happening in regions not directly observable. So that we have the curious situation brought about by three centuries of scientific work in the interest of the senses, that while reason is distrusted as soon as it goes beyond the evidence of the senses, the power of reason, and the part played by reason

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in building up the scientific world, is greater than it ever was at even the most rationalistic period of thought.

This result is not unrelated to the situation in the sixteenth and early seventeenth centuries, in which the Copernicans appealed to rational simplicity and convenience in rejecting the Ptolemaic view of the motions in the heavens, which was based on appeal to the senses. In the same way Galileo rejected the Aristotelian account of the motions of bodies, which was based on the evidence of the senses, on the ground of its lack of consistence with reason. The "modern" view, that is, appealed to reason against the deliverance of the senses; the scholastic view stood firm by the senses. The situation was of course a mixed one. It was in the interest of a more accurate determination of the facts presented to the senses that Copernicus and Galileo insisted on a more rational interpretation as against the naïve interpretations of the Aristotelians, and that Descartes and Bacon each in his own way emphasized stricter conditions for the application of reason to facts. But we can at any rate say that while the modern movement has on the whole been regarded as a vindication of the senses, it has been in the main a movement increasing the range and power of reason. Reason has become in fact a constitutional monarch, hedged round with so many safeguards that all antagonism is set at rest, and it is more powerful than ever before; with the sole qualification that it has to content itself with having its power only in practice and not in theory. Atoms then are theoretically dead, but practically more powerful than ever. And this really accounts for the present attitude toward science of many chemists and physicists. So long as they can regard science as merely descriptive they can trust their most powerful instrument—reason—in interpreting and correlating the results of their observations.

V

The descriptive view of science has its main adherents in the fields of chemistry and physics. In biology the situation is rather different. For the general quarrel between mechanists and vitalists in biology is not merely about which concepts are more convenient for the correlation of events, but rather about what the organism really is. The mechanists here insist that the organism is really a physico-chemical complex. The vitalists insist that it is something more; and their view is of interest to us here as showing how the old formalist view receives modification under the conditions of modern scientific research. The vitalists are at one with the mechanists in insisting on keeping in close touch with what can be actually observed; but they insist that the kind of correlation needed for the facts of biology is so different from that needed for the facts of

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chemistry and physics as to involve concepts of an entirely different order; and this, they insist, involves the need for supposing that there is actually present in the organism a causal agent entirely different from anything which needs to be assumed in a purely material thing, even though this causal agency cannot itself be observed directly.

The difficulties with which this view has to contend turn on the difference between the use to which the concept "life" is put, and the uses which can be made of the concept "atom" for instance in chemistry. The "atom" does actual scientific work, since it is directly linked with quantity, and thus enters into scientific equations. But "life" does no quantitative work. If it enables various facts to be grouped together, it does this, it may be insisted, only so long as the facts are qualitative and vague. If it could justify itself in actual equations, then I take it that the bulk of modern scientists would be willing to accept it on the same terms as "atoms"—viz. as a useful concept, having value as a hypothesis. But even then many scientists would contend that this did not give it any right to claim ontological status.

These difficulties call for a more radical probing into the whole situation; and this is to be found in the view at present prominent, that of "emergent evolution," to which we must now turn.

VI

The views so far considered depend on a relative separation between the variety observed in actual occurrences and the common or general characteristics on which science lays stress. Either there are common elements distinguishable from the variety of occurrences, or there are not. That is the antithesis on which we have been resting. And if there are no common elements distinguishable, then, we have assumed, science, which makes general statements, must be merely descriptive, not in the literal sense of describing what is present, but in the more complex sense we have already indicated.

On these assumptions, "matter," *e.g.*, is either an actual common stuff distinguishable from and underlying occurrences, or it is a merely descriptive term. "Atoms" are either really there, invisible, inaudible, etc., or else a mere hypothesis. Life in the same way is either an actual entity, working in the organism, or a mere concept of convenience.

But the exhaustiveness of our alternatives may be denied. The hidden assumption on which they rest is that if anything is real and substantial, it must have certain properties or modes of working which belong unalterably to it, and which must thus enter un-

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changed into any transaction into which it enters. Once a real atom, always a real atom, and wherever it is, it operates in precisely the same way. In other words, if anything is real, it has certain essential qualities which it cannot lose. The descriptive view denies that anything of this sort can be observed, and hence does not claim ontological status for its hypothetical entities which possess these characteristics. That is just the strength of the descriptive view.

If, however, you deny that what is real must possess certain essential qualities which it carries with it into all its situations, another alternative is possible, which we have so far left out of view.

The view known as the theory of emergent evolution owes its importance to the fact that it rests on this denial. It desires to get away from the supposition that what functions in a distinctive way, and is not a mere resultant of other entities, must owe its distinctiveness to a separate entity which possesses unalterably certain essential qualities, so that it can only come into existence by an act of creation, and only go out of existence by an act of annihilation. Hence it speaks of matter, life, and mind as "qualities" rather than as "susbtances" or "reals." It speaks of these "qualities" as "emerging" because it desires to stress the view that they are not to be regarded as merely complex resultants of processes which can be described in terms into which they do not enter.

On the old assumption, if atoms are real substances, then any complex of atoms to which no new substance is added must be nothing more than a complex of atoms, and its properties must be a mere resultant of the essential properties of the atoms themselves. On the view of emergent evolution, there are no such "essential properties" to be found anywhere. The behaviour of an atom is not separable from the particular complex in which it functions. Its properties are relative to its complex. You can mark off a type of complex situations within all of which the atom functions in the same general way; and another type of situations in which you have to admit modifications of the way the atom functions. The atom can itself be broken up into electrons, but its mode of functioning is not a mere resultant of the modes of functioning of electrons.

We have, then, it is insisted, various levels of complexity in events, and there are complex groupings of events which have to be regarded as individuals of a different kind from the events grouped in them. We can describe this general situation by saying that "new qualities emerge" as we pass from one level of organization of events to another. "Life" here is a distinct mode of behaviour, which is not a mere resultant of physico-chemical processes, but

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which is found wherever a particular type of organization is found. The parts of a living thing, in being separated from the living thing, become arranged in a different type of organization, viz. a merely physico-chemical organization, and thereupon show a different level of characteristics. Strictly speaking, we should not on this view speak of physico-chemical elements as existing within an organism at all—except for the convenience of correlation of the properties on the two levels, and on account of the fact that at certain points and in certain respects the organization displayed within the organism is merely physico-chemical.

The theory of emergent evolution not only asserts what we have already stated, but it asserts in addition that the less complex types of organization occur earlier in time than the more complex types, and that the latter arise out of the former in the time-order of their complexity. With this assertion we have here nothing to do. We are here concerned with the theory only so far as it suggests a distinctive view of the nature of science.

The view it suggests enables us to regard science as not "merely" descriptive in the sense of using convenient hypotheses for the sake of linking events with a frame of reference, nor as formal in any bad sense. It enables us to combine the two apparently conflicting views. We can speak of atoms as actual, without being compelled to separate them from the variety of occurrences, or to suppose that they are inaccessible to observation, for they are characteristic modes of functioning of certain types of complex. We can speak of "life" as actual, without having to think of an entity separate from the complex mode of organization of the parts of a living organism. We can say that some things are "really" (in the sense of "indeed") physico-chemical, and some "really" living, without being compelled to regard "life" either as a mere complex physico-chemical mechanism, or as a miraculous creation. All we shall mean is that we find ourselves compelled to correlate events within the organism in a distinctive way which gradually builds up for us a concrete account of the organism as an individual whole.

VII

The present article has been mainly an attempt to give a general account of some of the main views of science, without discussing them in detail; and I am aware how very inadequate the account is, and how many important considerations have had to be omitted. There is in particular one very important aspect of the question which must be discussed before any attempt can be made to evaluate the various theories, viz. the question of the rôle of abstraction in science. For even more widespread than the view that the sciences

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merely describe events in terms of convenient frames of reference is the view that the sciences are abstract; and it is important to see what is the ground for this view, and what is its significance. And in the discussion of this we shall come to the heart of our main question of what relation the sciences can be expected to have to reality as a whole.

(*To be continued*)

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THE ANNUAL MEETING

THE Fourth Ordinary General Meeting of the Institute was held at the Royal Society of Arts, John Street, Adelphi, London, W.C., on Friday, July 26, 1929.

Professor J. H. MUIRHEAD, M.A., LL.D. (Chairman of the Council), in the absence of the President, the Earl of Balfour, through indisposition, presided.

THE CHAIRMAN: Sir Lynden Macassey, Sir Oliver Lodge, Ladies and Gentlemen. I do not think we can begin the business of this meeting without referring to the debt which this Institute owes to its late Chairman, Professor Leonard Hobhouse—a debt which is quite incalculable. When the Institute was first proposed Professor Hobhouse threw himself with great enthusiasm into the proposal. We were fortunate enough to get him as our first Chairman of Council. He has guided us through the shallows of our passage, and through the cross-currents, so to speak, of the channel; and now that we are fairly going we have to drop our pilot. It seems to me to give, I would almost say, a certain consecration to the work of this Institute that we have been so early deprived of his help. At any rate, it is a call to us to carry on the work of this Institute, which he so well began, in the same spirit in which he initiated it. I will ask the audience to stand for a moment as a tribute to his memory.

(*The audience upstood.*)

We all greatly regret that our President, Lord Balfour, is not able, owing to indisposition, to be here to-day and to give us, as formerly, an address. In the absence of a distinguished metaphysician, we are fortunate in having present a distinguished physicist. I do not think there is anything which is so characteristic of the present-day state of things in philosophy as the approximation of philosophy to science, and of metaphysics to physics. It is a thing which, when I look back over thirty years, is almost inconceivable—that there should have come about this *entente*, so to speak, between the physicist and the philosopher. I can remember well enough to say that in the thirties a physicist would no more think of attending a meeting of metaphysicians than he would of attending the incantations of a medicine man in the Fiji Islands or a mediæval conclave to discuss how many angels could stand upon the point of a needle. All that has been changed—whether because metaphysicians have become more concrete and sensible, or whether because physicists have become more speculative, it is not for me to say. At any rate, there has been a remarkable approximation of physics to metaphysics. It reminds one of what the Irishman said: "These two men are very much alike, especially one of them." (Laughter.) Which one that is I shall leave Sir Oliver Lodge to tell us. There is no one in this country—perhaps in the whole world—who is able so well as he to throw light upon that dark frontier between the two sciences. I will now ask Sir Oliver Lodge to give his address. (Applause.)

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BEYOND PHYSICS

SIR OLIVER LODGE, D.Sc., LL.D., F.R.S.

Being partly an appreciative criticism of Eddington's Gifford Lectures, and partly an attempt to find a permanent physical basis for Life and Mind.[1]

Had I been asked any time last century to discourse to philosophers on a subject entitled "Beyond Physics," I should have taken it as meaning "Metaphysics," and have declined on the ground that they knew more about it than I did. But now that the subject has been suggested to me in the second quarter of the twentieth century, I realize that a certain number of physicists, especially mathematical ones, have gone beyond themselves in a semi-philosophical direction, have thrown our old physical ideas into some confusion, and have devised a number of complicated abstractions which they seem able to deal with by recondite methods invented for other purposes by the pure mathematicians. Of these they do not attempt to form any mental image, and do not encourage us to try to do so. They mistrust the method of physical imagery, or what they call "models," which constituted one of the main methods of investigation in the nineteenth century; they are content to deal with abstract symbols, which presumably represent something real, though they mistrust the term "reality," and decline to define it. The younger modern physicists are content to work in a nebulous region of unknown and perhaps unknowable entities, remote from our ordinary conceptions and everyday experiences; so that, whereas the old idea of explanation consisted in trying to express mysterious or recondite phenomena in terms of something with which we were more familiar, they now point out that our apparent familiarity with those simpler things was more or less of an illusion, that they furnished no valid explanation at all, and that the physical and engineering conceptions or habits of thought on which we depended were largely misleading. They claim that the things we observed and measured would be observed and measured differently by different observers, and that no one was able to say that one observation was better than another. The measurements made by observers with unknown motions are all equally near, and perhaps equally far from, the truth: they are all relative except in a few salient and unusual instances.

THE BEARING OF MODERN SCIENCE ON AN IDEALISTIC INTERPRETATION OF THE UNIVERSE

I find that the term "Beyond Physics" was actually used by one of the most eminent of these new explorers, for it occurs on page 344 of the published (1928) version of Eddington's Gifford Lectures, *On the Nature of the Physical World*, delivered in Edinburgh in 1927. I quote part of a passage:—

> "The physicist now regards his own external world in a way which I can only describe as more mystical, though not less exact and practical than that which prevailed some years ago, when it was taken for granted that nothing could be true unless an engineer could make a model of it. There was a time when the whole combination of self and environment which makes up experience seemed likely to pass under the dominion of a physics much more iron-bound than it is now. That overweening

[1] This Address is soon going to be published in book form, probably with some other matter, by Messrs. Allen and Unwin.

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phase, when it was almost necessary to ask the permission of physics to call one's soul one's own, is past. The change gives rise to thoughts which ought to be developed. Even if we cannot attain to much clarity of constructive thought, we can discern that certain assumptions, expectations, or fears, are no longer applicable.

"Is it merely a well-meaning kind of nonsense for a physicist to affirm this necessity for an outlook beyond physics? It is worse nonsense to deny it."

I do not continue to quote the witty remarks with which this paragraph is followed up, though I would call attention to the next page, where he puts a dilemma before those who would explain everything, including even nonsense, by processes in the brain, and asks what criterion they have on that basis for discriminating between a right and a wrong brain-process, or between "ought" and "ought not," what criterion they have for nonsense, on their principles, and by what right they would condemn it. As, for instance, why should we object to a wrong arithmetical result produced by an ill-working brain; why desire a correct answer?

"A physical machine cannot esteem or want anything; whatever is fed into it it will chaw up according to the laws of its physical machinery. That which in the physical world shadows the nonsense in the mind affords no ground for its condemnation. In a world of æther and electrons we might perhaps encounter *nonsense*; we could not encounter *damned nonsense*."

In reading Eddington and some other of the more mystical or abstract physicists who live in a world of unknown and possibly unknowable entities, I am sometimes tempted to ask whether we are in any way making a return to the discarded philosophy of Herbert Spencer. There was a time, more than half a century ago, when I studied philosophy to some extent under Croom Robertson at University College, London, with the textbooks of Bain on the Sensations, the Emotions, and the Will, that I became enamoured of Herbert Spencer's *First Principles*. I remember copying out large portions of that book, so as to impress it on my mind. But gradually I found that Herbert Spencer's physics were shaky, and occasionally what we called "wrong," and I ventured to regard his contention for an unknowable substratum as an unnecessary closing of the door. But perhaps this perception of an unknowable was only premature; perhaps the present obliteration of the distinction between right and wrong measurements is a step in the same direction as the philosophy of Nietzsche, which attempted to go "beyond good and evil." I am not competent to judge how far Spencer may turn out to have been justified in some of his contentions by the advance of physics, but it may be worthy of consideration by professed philosophers.

I must hasten to add that Eddington in his own philosophy does not succumb to the idea that the physical world contains everything of importance, and that success in attaining results is the only test of truth. He himself is ready to condemn nonsense on grounds beyond physics; he is by no means willing to limit the universe to chemical and physical processes, however successful they may be: and so he adds:—

"My own concern lest I should have been talking nonsense ends in persuading me that I have to reckon with something that could not possibly be found in the physical world."

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He thus admits and defends a charge which may be brought against his lectures of admitting some degree of supernaturalism, and says that "in so far as supernaturalism is associated with the denial of strict causality I can only answer that that is what the modern scientific development of the quantum theory brings us to." Consciousness, after all, is part of nature; and though in physics consciousness may be regarded as "something which unfortunately has to be admitted, but which it is scarcely polite to mention," Eddington evades the difficulty by limitation of area, preferring to restrict physics to a cycle of operations going round and round in a cycle, complete in itself, without the more immediately apprehensible human entities entering in. He claims to have associated consciousness with a background untouched in the physical survey of the world, and thus incidentally to have given the physicists "a domain where he can go round and round in cycles without ever encountering anything to bring a blush to his cheek."

> "It has been . . . the purpose of our discussion to secure such a realm where scientific method may work unhindered. . . . The accusation is often made that, by its neglect of aspects of human experience evident to a wider culture, physical science has been overtaken by a kind of madness leading it sadly astray. It is part of our contention that there exists a wide field of research for which the methods of physics suffice, into which the introduction of these other aspects would be entirely mischievous."

I quote these inadequate samples in fairness to Professor Eddington and his co-thinkers, as showing that they do not regard their mathematical abstractions as a valid ground for the philosopher and the theologian to base their theories upon. He considers that such a basis would be unprofitable and even dangerous, inasmuch as it would leave enduring entities at the mercy of scientific revolution and changes of thought. He partitions off the domain of physical science, limiting it, as I think almost unduly, to its metrical aspect, claiming that the data which mathematical physicists employ are based upon laboratory experience and the readings of instruments. He would limit the domain of physics proper to pointer-readings. This, he says, is the quantitative aspect with which mathematics deals, and it necessarily excludes great tracts of direct human experience which are not metrical at all; but he is careful to explain that in excluding them from the limited scientific domain he is not making the mistake of denying their existence and high value. Beyond our physical and metrical apprehensions he would admit our æsthetic and religious convictions and intuitions as equally real, equally valid, and still more comprehensive; not a mere colourless deduction from or extension of our physical process, but something approached from a different side altogether. If we approach the spiritual world from the side of the material, all we can assert of it would be insufficient to justify even the palest brand of theology.

> "But the spiritual world as understood in any serious religion is by no means a colourless domain . . . the attribution of religious colour to the domain must rest on inner conviction."

And here is a quotation which I imagine would be heartily approved by your President, Lord Balfour; for as I understand his philosophy, he has urged something of much the same kind, many times and in many places:—

> "We should not deny validity to certain inner convictions, which seem parallel with the unreasoning trust in reason which is at the basis

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of mathematics, with an innate sense of the fitness of things which is at the basis of the science of the physical world, and with an irresistible sense of incongruity which is at the basis of the justification of humour. Or perhaps it is not so much a question of asserting the validity of these convictions as of recognizing their function as an essential part of our nature. We do not defend the validity of seeing beauty in a natural landscape; we accept with gratitude the fact that we are so endowed as to see it that way."

Otherwise, if we were to base our religious convictions and our sense of free will on the discoveries of modern science and on the progress recently made towards the reality of undetermined processes and other curious developments of the latest speculations in physics, we might be led to the preposterous conclusion that "religion first became possible for a reasonable scientific man about the year 1927."

I emphasize this caution because I myself am tempted to go further than Eddington, and to see in many of the conclusions now either drawn or in process of being drawn by modern science some justification and some assistance towards a possible comprehension of the universe in its wider and larger aspects. I myself have been led in these directions by psychical and other investigations, which form no part of Eddington's scheme, and which at present lie outside the domain of physics. My aim is to incorporate them with physics, and to seek to show a connection between physics widely interpreted and the region beyond physics. The task is a difficult one, and may be impossible; but then failure need throw no doubt upon the validity and genuine consistency of the inferences drawn in different departments of human thought; a failure to unify them is a human failure, not necessarily embedded in the nature of things at all.

Nevertheless, in spite of his unwillingness to base anything really serious upon the outcome of physical discovery, instead of upon direct apprehension, it is clear that Eddington does regard with some hope, and even with some complacency, the idea that modern physics has opened a fresh avenue towards Indeterminism and free will, by its apparent overthrow of the strict causality in which hitherto it had been bound. Those pointer-readings, on the limitations of which he insists, may after all be more than mere readings of a scale; they may be unwittingly pointing like a finger-post in some philosophic direction. For he speaks as follows:—

"If our expectation should prove well founded, that 1927 has seen the final overthrow of strict causality by Heisenberg, Bohr, Born, and others, the year will certainly rank as one of the greatest epochs in the development of scientific philosophy. But seeing that before this enlightened era men managed to persuade themselves that they had to mould their own material future notwithstanding the yoke of strict causality, they might well use the same *modus vivendi* in religion."

His method of averting a conflict between science and religion is for both sides to confine themselves to their proper domain. To take one of his own examples: Most people think that there is a future non-material existence in store for us; this, which may be called Heaven, used to be thought of as somewhere in space: now it is regarded as somewhere in time.

"(All the meaning of the belief is bound up with the word *future*; there is no comfort in an assurance of bliss in some *former* state of existence.) On the other hand, the scientist declares that time and

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space are a single continuum, and the modern idea of a Heaven in time but not in space is in this respect more at variance with science than the pre-Copernican idea of a Heaven above our heads. The question I am putting is not whether the theologian or the scientist is right, but which is trespassing on the domain of the other? . . . Science and theology can make what mistakes they please provided that they make them *in their own territory*; they cannot quarrel if they keep to their own realms. . . . It is not so much the particular form that scientific theories have now taken . . . as the movement of thought behind them that concerns the philosopher. Our eyes once opened, we may pass on to a yet newer outlook on the world, but we can never go back to the old outlook."

I have extracted these passages, and would like to extract many others, from Eddington's brilliant and accessible book called *The Nature of the Physical World*, because I want to avoid even the appearance of seeming to claim his great authority in support of any speculations of my own. I sometimes agree with him, and sometimes disagree. He is dealing in a vivid and illuminating manner with very difficult subjects. The main part of the book is a treatise in ordinary language on the most advanced and most modern physics. In reading him you will find that he makes strange and sometimes incredible assertions. He purposely puts things in a way that will attract attention, and may lead people to think sometimes that he cannot know what he is talking about. Some of the assertions will sound like nonsense. But as another great mathematical physicist has said: "Heaven only knows what seeming nonsense may not to-morrow be demonstrated truth."

What I want to guard readers against is any idea that Eddington is talking careless nonsense. His utterances represent the outcome of profound knowledge, such as is possessed by few other men; and to criticize or disagree with him is no light matter. There is a mass of unexpressed meaning behind all his sentences. His paradoxes have a wealth of meaning behind them. I sometimes wish that he had illustrated his book by interleaved pages, which might be skipped, giving some indication of the mathematics on which his assertions are based. Let it be understood, however, that, though this would be a heavy task, it could be done; the mathematics can be found in other writings either by himself or by others (*Space, Time, and Gravitation* for instance); and students of the future will have to take all these writings into account. Even those which are being superseded are instructive, for they show the steps by which the further deductions have been reached. The whole science is in an active growing condition, though the intermediate stages may be ephemeral, like the tentative placing together of the dissected fragments of a picture in a jigsaw puzzle:—

"These revolutions of thought as to the final picture do not cause the scientist to lose faith in his handiwork, for he is aware that the completed portion is growing steadily. Those who look over his shoulder and use the present partially developed picture for purposes outside science do so at their own risk."

And in another place he says something similar that I will quote directly, for it may be taken as an anticipatory warning to me and my like not to attempt to extract psychical nutriment from tentative and uncertain stages in modern physics. Which nevertheless I am going to do.

Here is the quotation:—

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> "Schrödinger's theory is now enjoying the full tide of popularity, partly because of intrinsic merit, but also, I suspect, partly because it is the only one of the three that is simple enough to be misunderstood. . . . It would probably be wiser to nail up over the door of the new quantum theory a notice, 'Structural alterations in progress. No admittance except on business,' and particularly to warn the doorkeeper to keep out prying philosophers. . . . I do not see the least likelihood that his ideas will survive long in their present form."

Well, that is a weighty warning, and if my readers proceed any further with my exposition and speculation they will doubtless bear it in mind.

After all, neither Eddington nor anyone can remain uninfluenced by the far-reaching nature of modern discoveries. He says in his Preface that his philosophical views

> "can only claim attention in so far as they are the direct outcome of a study and apprehension of modern scientific work. . . . The idealistic tinge in my conception of the physical world arose out of mathematical researches on the relativity theory. In so far as I had any earlier philosophical views, they were of an entirely different complexion."

For my own part I could say much the same in respect of my psychical researches. But these, I must hasten to add, are entirely outside Eddington's scope; a fact which to me makes his conclusions all the more valuable, because when people arrive at similar results by different paths, it is an indication that they are proceeding on the whole in a right direction. Eddington does not base his spiritual outlook on the kind of facts with which I have concerned myself. He says on page 340:—

> "A point that must be insisted on is that religion, or contact with spiritual power, if it has any general importance at all, must be a commonplace matter of ordinary life, and it should be treated as such in any discussion. I hope that you have not interpreted my references to mysticism as referring to abnormal experiences and revelations. I am not qualified to discuss what evidential value (if any) may be attached to the stranger forms of experience and insight. But, in any case, to suppose that mystical religion is mainly concerned with these is like supposing that Einstein's theory is mainly concerned with the perihelion of Mercury and a few other exceptional observations."

I accept the analogy. In so far as psychic experiences are exceptional and peculiar, they serve as tests wherewith to confront ideas otherwise arrived at. They can be treated as of the nature of verifications, just as the perihelion of Mercury and the deflection of a beam of light by a gravitational mass were treated as verifications of Einstein's theory of relativity. If the deduction of the reality of a spiritual world is made on any grounds whatever, then that reality ought to have consequences which could be verified. And I claim that immediate contact or intercourse with the denizens of such a spiritual world is of the nature of verification.

New Outlook on the Material World

The idealistic world of the broadminded physicists—such as it is—is an indefinite vagueness deduced in an elaborate way from the manifest incompleteness of any other mode of regarding the universe as a whole. The material aspect of things is insufficient, and there are many indications of

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something beyond. The physicist has begun to go beyond physics into he knows not what.

> "No familiar conceptions can be woven round the electron; it belongs to the waiting list. . . . Descriptions of the phenomena of atomic physics have an extraordinary vividness. We see the atoms with their girdles of circulating electrons darting hither and thither, colliding and rebounding. Free electrons torn from the girdles hurry away a hundred times faster, curving sharply round the atoms with slide slips and hair-breadth escapes. The truants are caught and attached to the girdles, and the escaping energy shakes the ether into vibration. X-rays impinge on the atoms and toss the electrons into higher orbits. We see these electrons falling back again, sometimes by steps, sometimes with a rush, caught in a cul-de-sac of metastability, hesitating before 'forbidden passages.' Behind it all the quantum *h* regulates each change with mathematical precision. This is the sort of picture that appeals to our understanding—no insubstantial pageant to fade like a dream."

So says Eddington with vivid imagery.

> "Nevertheless," he goes on, "the description of the processes must be taken with a grain of salt. The tossing up of the electron is a conventional way of depicting a particular change of state of the atoms which cannot really be associated with movements in space as macroscopically conceived. *Something unknown is doing we don't know what*—that is what our theory amounts to."

Well, it amounts to a good deal more than that; but still even in physics the essential nature of the units is unknown, and still more unknown must be the nature of a non-physical world. And yet some such world has been inferred. Here is where psychic experience enters. If the world exists, if we can get into contact with it, we may have primary apprehension of it, and thus gradually our experience can become more definite. There are other avenues to truth than the metrical methods of physics. Eddington fully admits that there are other methods than those of metrical science, but I want to go further and claim that these other avenues, or some of them, are open to scientific exploration. Biological methods, for instance, are often not metrical, but they constitute a part of science. So do psychological methods. Science is not limited to its metrical aspect. And in the exploration of reality every method and every avenue must be explored. We belong both to the physical and to the unphysical world here and now, and we cannot afford to separate them and keep them in watertight compartments.

> "We are bound to claim for human nature that, either of itself or as inspired by a power beyond, it is capable of making legitimate judgments of significance. Otherwise we cannot even reach a physical world. . . . To make a start we must be aware of something . . . and we must be convinced of the significance of that awareness. . . . The ultimate data must be given to us by a non-reasoning process—a self-knowledge of that which is in our consciousness."

So far I have been dealing mainly with the implications of Eddington's philosophy, taking him as an example of one of the most thoughtful of the explorers into the innermost recesses of mathematical physics. But fortunately Eddington himself has developed his own thesis in these directions in the Swarthmore Lecture which he gave last year to the Society of Friends, and

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which is published as a small book called *Science and the Unseen World*. Hence, if I have unintentionally misrepresented him in any respect, the misrepresentation can be corrected by reading that comparatively easy and remarkable pronouncement.

Instead of Eddington as an example of an idealizing mathematical physicist, I might equally well have taken Whitehead, from whose notable book, *Science and the Modern World*, I have elsewhere made considerable extracts and appreciative comments (*Proceedings S.P.R.* for June 1929). But Whitehead does not write with the same clearness and vividness as Eddington does; and though I find myself even more in agreement with Whitehead than with Eddington (or imagine that I do, for I don't always understand him), he will hardly, I think, make the same impression. Whitehead and Eddington do not always take the same point of view, they sometimes usefully disagree. Eddington agrees much more with Einstein than Whitehead does. Yet their disagreements do not seem to me fundamental; and Whitehead carries the matter even further in some respects in the idealistic direction. He does not limit physics to pointer-readings. He is willing to extend the methods of science beyond their ordinary scope. He looks upon the universe as a kind of *organism*, and detects attributes akin to those of life or living organisms everywhere. And yet his views are mainly based upon mathematical physics, which is his own subject, though he seems well acquainted with the history of philosophy too, and he will perhaps be more acceptable to professed philosophical readers than Eddington is. He deals, in fact, less with the intricacies of physics, and employs more consistently the language and methods of philosophy. In comparing Eddington with Whitehead, the interest for me, and I hope for others, is that, though these two eminent and learned men differ in detail, their conclusions are ultimately rather similar.

Some Biological Contributions towards Mental Activity and Guidance

And here, quite recently, is a contribution from the side of biology, or at least from the side of experimental psychology. On May 14, 1929, the Herbert Spencer Lecture was delivered at Oxford by Dr. Charles S. Myers of Cambridge, under the title "Psychological Conceptions in Other Sciences." In this he accepts most of the conclusion of modern physics, realizes the probable truth of both guidance and mechanism, and sustains it by arguments derived from experimental psychology. He claims that psychology emphasized relativity long before physics attended to it. Physical theory, he says, is fast abandoning its former notions of substance and absoluteness. Mechanical determinism is limited.

> "The once striking characteristics distinguishing Matter from Mind are fading rapidly. Mind appears to be no more 'unsubstantial' than Matter; Matter to be no more 'predictable' than Mind. To account for the Evolution, the history and conduct, of the Universe, or of any organized individual within the Universe, whether relating to Mind, Life, or Matter, not only mechanical principles but also a certain adapting, selecting, guiding activity must ultimately be included among the *First Principles* of Science."

Dr. Myers' pamphlet is a kind of supplement to Eddington and Whitehead, though on a much smaller scale. It is short, and I need not make extracts

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from it. He points out that there is a working machine in evolution, but that the machine needs directive guidance, either pre-determined or continually selected and adapted. In addition to conservation of energy and conservation of matter, he emphasizes what he calls the psychologist's peculiar principle, "conservation of self," or, more generally, conservation of the individual system, which makes for preservation of pattern, endurance of identity, and unity and continuity of the individual throughout its history. The biological struggle for existence is essentially a psychical struggle, and is an illustration of the conservation of self. This principle he finds stereotyped in the patterns of animal and vegetable life, and wishes to invoke it also to account for the distinctive patterns and types of movement and configuration observable throughout the physical, chemical, and stellar worlds.

He points out that the constituent elements into which science tends to analyse reality come much later, and are really more complicated than the simple wholes which are presented to experience and consciousness. It is not grammatical rules which make a language; the language comes first, and the rules are analysed out afterwards. A sonata of Beethoven is not compounded and built up as a combination of elementary scales and chords; the music came as a whole into the mind of the composer. It can be analysed afterwards, and attention can be directed to the utilization of fragmentary scales and chords by the expository skill of Dr. Walford Davies. Dr. Myers does not use this illustration, but I think he would agree with it. The universe is given to us as a homogeneous whole, and its heterogeneous elements are obtained by differentiation. It is not that the whole is aggregated or built up out of its elements: the elements are as it were carved out of the pre-existing and evolving whole; they are not combined to produce it.

> "The old view expressed by Spencer, and not yet wholly extinct among biologists, was that consciousness has arisen as an 'epiphenomenal' product of living matter when physiological processes became too complex to work automatically. The modern psychological view is the direct converse of this—namely, that consciousness, however primitive, fulfilling, however feebly, the function of orderly direction and purpose, is primary, and that it has grown by distillation, differentiation, and restriction to narrower, more dominating, higher levels within the organism."

He then makes a quotation from an admirable but neglected physicist, John James Waterston,

> "who in 1843 gave expression to the view that the phenomena of Mind will one day be employed to throw light on the phenomena of Matter . . . [that organization is the striking feature and] that if molecular philosophy is ever destined to advance into the region of [biological] organization the phenomena of perceptive consciousness will admit of being applied to illustrate the physical aspect of the elementary processes of matter."

Organic phenomena cannot be explained by mechanical arrangement without some organizing power which Waterston called "molecular adaptations."

Something of the same sort is found in Eddington, where he claims that the design and organization rather than the individual separate entities are the important things, and directs attention not to the energy alone, but to the organization of the energy.

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> "There is no doubt that the scheme of physics, as it has stood for the last three-quarters of a century, postulates a date at which either the entities of the universe were created in a state of high organization, or pre-existing entities were endowed with that organization which they have been squandering ever since. Moreover, this organization is admittedly the antithesis of chance. It is something which could not occur fortuitously."

The external world is not a mere assemblage of myriads of particles, not a mere collection of atoms, ether waves, and the like, going about their business.

> "There is a side of our personality which impels us to dwell on beauty and other æsthetic significances in Nature, and in the work of man, so that our environment means to us much that is not warranted by anything found in the scientific inventory of its structure. An overwhelming feeling tells us that this is right and indispensable to the purpose of our existence."

I might make somewhat similar citations from General Smuts's important book on Holism, but there is little need to call attention to this, or to the notable series of Gifford Lectures by the physiologist, Dr. John Scott Haldane, published under the title *The Sciences and Philosophy*, a book that contains much with which I sympathize. So does Professor McDougall's *Body and Mind*; and, indeed, many other recent books might be referred to, the writers often differing in detail, but on the whole agreeing in their main contentions, as contrasted with those of the materialistic philosophers of last century. I mention these books in order to illustrate and justify my contention that different thinkers from different points of view are converging on some kind of guidance, some kind of mental activity, some kind of organizing power, some rational and predetermining influence, not only in the works of man, where it is conspicuous, but in the works of nature too. I fully expect that this guiding power, whether we call it life or mind or entelechy or what, this directive and organizing tendency has physical mechanism associated with it, and that it is through its concealed physical mechanism that it is able to operate on the sensible and tangible world of atoms and electrons. On this subject I have ideas, but they are vague, they have not yet risen to the dignity of a physical theory, and I doubt if they should be intruded on your notice. I have been asked to go "beyond physics," but I have no wish to separate myself from a physical base, for I conjecture that physics and psychics are continually and permanently interlocked. And yet the physical mechanism, say of thought or mind or directing control, is so concealed and so at present unknown that one cannot make definite statements about it, even of the highly abstract and yet quantitatively definite kind which would ensure attention from the workers in modern physics.

A Transition Period

Perhaps it will be best for me to remember that I have been asked to give this address as a nineteenth-century physicist, one who was brought up in the atmosphere of Stokes and Kelvin and Tait and Maxwell and Rayleigh, one who co-operated with FitzGerald and Poynting and regarded with admiration the work of Sir Joseph Larmor and Sir J. J. Thomson, one whose foundations were laid before any of the modern developments had shown above the horizon, one who had first regarded the theory of relativity and

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the quantum theory with a kind of apprehension and dislike, and yet who has been led by the compulsion of fact to realize that in these ways a broader, deeper, and more intimate perception of the processes of nature was obtainable. I perceive or admit that the old mechanical or engineering ether is extinct, but hope that a new far less familiar but much more accommodating ether is rising above the horizon, and that radiation or ether waves of one or other kind may ultimately turn out to be the most enduring reality in physical existence.

What the great men that I have cited would have thought of all these new developments I cannot say. To some extent, and in their own time, they were rebellious. Larmor and J. J. Thomson are still with us, and can speak for themselves. That they acquiesce entirely is not to be expected; that they are watchfully critical is certain. The abandonment of old methods may seem to some of the younger workers more complete than it is. The method of working in nothing but mathematical abstractions, with no physical image or concrete ideas to catch hold of, may turn out in the long run impracticable. That progress can be made at all in such ways is astonishing. There may have to be some return to the old paths. Professor Whittaker of Edinburgh is working in that direction; and so, I think, are the others that I have mentioned—with what success remains to be seen.

Many of the theoretical results now attributed to relativity are based essentially upon the old nineteenth-century physics. That the mass of an electron was not constant, but was a function of the speed, was worked out long ago both by Heaviside and by J. J. Thomson. And as soon as the electrical theory of matter was established, the same conclusion applied to all matter. The variation of mass is called for brevity a "relativity correction," and there is some excuse for that term; but it is not quite fair historically, for it is a consequence of orthodox electromagnetic theory. The equations of Clerk Maxwell remain in possession of the field, and the deductions that have been made from them continue valid. The Lorentz transformation, on which so much depends when we shift from one system of moving axes to another, was devised first by Larmor, being supplemented and made reciprocal by the additional factor of the FitzGerald contraction. All these things have gradually evolved, and it is difficult to specify any particular origin. Brilliant use has been made of them by the relativists, who have exercised their selective power in emphasizing the absoluteness of certain things as compared with others. Sometimes the absoluteness is little better than a postulate, which is justified and partially verified by the results obtained from it, but which nevertheless has never been finally and completely verified experimentally. Such a postulate is the impossibility and meaninglessness of locomotion through the ether; another is the absolute constancy of the velocity of light as measured by all observers, no matter how fast they themselves may be moving. And though this latter postulate is attractive, and if true suggests something very important about the constitution of the ether of space, yet it does not seem wise to accept either that or the other too gratuitously, or to shut the door to the need for actual verification. It is never wise to shut the door on any possible experiment; at present the difficulty is that a crucial experiment hardly seems possible.

Speaking as a nineteenth-century and conservative physicist, and knowing that my remarks will be received with some contumely by the Younger School, I dislike the emphasis which is laid upon observations and measurements made by observers travelling at high speed, a mode of argument presumably adopted for popular consumption, but with an element of absurdity in it. To say that an observer flying at 1,000 miles a second, or

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for that matter even walking at four miles an hour through a laboratory, can make measurements just as good as one who sits down to his observation and makes any necessary corrections afterwards, is hardly in accordance with common sense. Measurement is not simply reading a scale or dial, it is a mental deduction, supplemented by calculation, using the scale-reading as an indicator. The relativist's observer doubtless takes his instrument with him, the instrument is part of the observer, but he is supposed to observe and measure details of things moving at enormous speeds relatively to himself. The attempt of an expositor to make things intelligible is conducted under difficulties; probably he is not misled by them himself, but the public is apt to be confused.

The most recent methods of abstract symbolism, in terms of tensors and matrices, are of no use to a mind that requires something more pictorial and conceivable. The dweller on the ground can admire the evolutions of a skilled aviator, without having any hope of taking part in them.

To illustrate the extremely abstract treatment of nature by the modern mathematical physicist, even in its simpler forms, I will refer to an article in *Mind*, expounding a modern view about the nature of matter. In the issue of *Mind* for April 1920 Eddington gave a paper on "The Meaning of Matter." The highly abstract mode of regarding matter there advocated expresses it in terms of the tensor $G_{\mu\nu}$ and the curvature of space. Eddington's expression for it at that date was $G_{\mu\nu} - \frac{1}{2}g_{\mu\nu}G$; in other words, he claims that matter is a variety of space-curvature and nothing else. It isn't that matter is something which curves or warps space, but that matter *is* the curvature. Furthermore, he pointed out in his book *Space, Time and Gravitation*, page 192, that some approach to these views was suggested with marvellous foresight by that remarkable genius W. K. Clifford forty years ago.

> "Whilst other English physicists were distracted by vortex-atoms and other will-o'-the-wisps, Clifford was convinced that matter and the motion of matter were aspects of space-curvature *and nothing more*. And he was no less convinced that these geometrical notions were only partial aspects of the relations of what he calls 'elements of feeling.' 'The reality corresponding to our perception of the motion of matter is an element of the complex thing we call feeling. What we might perceive as a plexus of nerve-disturbances is really in itself a feeling; and the succession of feelings which constitutes a man's consciousness is the reality which produces in our minds the perception of the motions of his brains . . . the theory of space-curvature hints at a possibility of describing matter and motion in terms of extension only . . . the future theorist has to build up the world as best he may.' "

But I must not waste time in generalities. Let us see whether there are a few points on which I can indicate in the more immediately physical parts of Eddington's brilliant 1927 exposition, where I should like to emphasize his contentions, and where I should like to put in a cautionary word.

Light as Messenger

A minor point on which I feel inclined to raise a small question is the singular importance which philosophic relativists attach to the speed of the quickest messenger available, in other words to the velocity of light, as something fundamentally affecting their notions of space and time. For instance, take Eddington's diagrams in his Gifford Lectures, pages 41–48, of

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what he calls "me," travelling down the stream of time, from the absolute past towards the absolute future, through parts of space which are "elsewhere." (It is really intended as a four-dimensional diagram, in which one only dimension of space is represented, the other one depicted being the time dimension.) The point where "me" is, is called "here-now," and a horizontal line drawn through that point represents "now," or simultaneity in other parts of space. But inasmuch as we have no instantaneous messenger to tell us what is happening in other parts of space, he very soon discards this "now" as meaningless, thus complicating the idea of simultaneity, and uses instead a slant line labelled "seen now," the slant corresponding to the velocity of light. There is a pair of such lines to the right and to the left; and the result is to partition off a region of space which might be called the "inaccessible" region, but which he calls "absolute elsewhere," meaning that by no device can we ascertain what is going on there, for we have no means of getting at it unless we or some other messenger can travel quicker than light.

I am ready to admit that the transmission of anything substantial or energetic quicker than light is impossible; but I feel doubtful whether "seen now" ought to have so important a philosophical significance. For if our vehicle of apprehension were, say, Sound, we should draw a slant line just a million times steeper, and label it "heard now." This line would obviously be of no philosophic importance; and yet if we could not travel faster than the velocity of sound, it would at first sight seem to have as much philosophical significance as the other. The difference, however, is that sound is an affection of matter, while light is an affection of space or ether, and therefore presumably is much more fundamental. It may be that relativists are right in instinctively attaching so much importance to the velocity of light, because the velocity which goes by that name seems to be a fundamental velocity in the universe, characteristic of the ether, in or of which everything consists. Its primary significance is probably the constitutional turbulent or rotational velocity of the ether, and only incidentally or in secondary fashion does it represent the speed with which that fundamental substance conveys waves.

It is this possibility, which I agree is very important if true, that leads me to criticize the diagrammatic procedure only in tentative and apologetic fashion. But otherwise the mere seeing of a phenomenon that has occurred at a distance, possibly a century after it has occurred, though interesting enough in itself, hardly seems to me a valid reason for questioning the meaning of simultaneity, and using the velocity of light to partition off three regions—one the absolute past, which is over and done with and unalterable; another the absolute future, into which alone we are able to go when the proper time has arrived; and a third region, which is wholly inaccessible to any of our senses, about which we can gain no information, a region of space which is absolutely and hopelessly "elsewhere." For I would venture to say that though occurrences in that region are physically inaccessible to us, and can only be known when they have crossed the "seen now" line and become past, yet psychically they are accessible. We can think of phenomena before they have occurred; and, indeed, we might make preparations for observing them when, later on, they cross the diagrammatic line of visibility and seem to us to occur. In other words, I suggest that *thought* can penetrate even the inaccessible region, though it must be admitted without any physical justification or observable result until the proper time arrives. We shall find that waves do exist that can travel quicker than light, though whether we ever utilize them is a question.

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My objection to philosophic emphasis on physical "seeing" may be taken as one of a more general kind, namely, that Relativists seem inclined to over-emphasize the laboratory method of observation in a curiously unpractical and imaginative fashion. The appeal is constantly being made to an observer; but the observer is apt to be placed under ludicrous conditions, and though his procedure seems able to be reasoned about, and deductions drawn as to what is absolute and what is not, yet the experiments are so imaginative that I doubt if they will stand the stress which is being put upon them. If we granted the feasibility of high-speed observers, they would doubtless be affected by all manner of FitzGerald contractions and sluggishness of clocks; but I doubt if such hypothetical observers are admissible.

The relativist contention is that without knowing it we may be such observers ourselves. Motion through the ether is said to be meaningless. It is easy to *imagine* enormous velocities, and who knows but that we might be affected with some such velocity. That is where I join issue. I do not think velocity through the ether is meaningless, though I am bound to admit that we have no means of measuring it at present. I regard it, however, as a legitimate effort of science to try and ascertain that velocity. I do not think it legitimate to say that the Ptolemaic system, in which the stars revolve round the earth once a day and once a year, is just as right as the Copernican system, where these motions are attributed to the earth. We may not be able as yet to measure motion except with reference to other pieces of matter, but some day I hope that it may be measured with reference to the ether; or if not to the ether itself, then perhaps to the rare cloud of interstellar matter which recent advances have detected, distributed throughout space, with an average motion which relative to the ether may be assumed nil, so that it can serve as a material standard of reference.

Apart, however, from any material standard, I should take the ether, or in other words space itself, as stationary as regards locomotion; and every velocity relative to that I should call absolute velocity. The Relativist mode of reasoning is doubtless legitimate, for it is legalized and justified by its results; it does enable deductions to be made, but it seems to me a mathematical device rather than something of philosophical importance—the kind of thing that Eddington has elsewhere called "a dodge, and a good dodge too." I should hope, however, that the progress of physics will render many things, such for instance as the FitzGerald contraction, definite and ascertainable, and not leave them at the mercy of imaginary and handicapped explorers, who at present are supposed each to claim that his own observation is as good as any others. The Relativists have already detected certain absolutes on which they lay stress, quite rightly. I would venture to urge them to keep an open mind for some other absolutes, which at present they seem to me too apt to deny, absolute locomotion through the ether being one, and perhaps the chief of them. I have no fault to find with the absolutes already discovered. The constitutional velocity c is a great discovery, and its importance is emphasized by the fact that it enters into the composition of velocities of quite ordinary things, so that we cannot calculate a resultant velocity by simple addition without taking c into account. And the way in which this method of composition of velocities accounts for the Fresnel-Fizeau speed of light in moving water is very striking and exhilarating, and seems to justify the Larmor-Lorentz transformation to a surprising degree.

In fact the temptation often is to throw in one's lot whole-heartedly with the Relativists, whose mode of dealing with things is so successful, and to withdraw any cautious and conservative opposition. But I think it would be

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a pity to do that prematurely, since it tends to shut the door on possible real experiments which can some day be actually made. Many attempts have been made to ascertain the speed of matter through ether, or absolute motion in space; and though they have all hitherto failed, I don't want it to be assumed too readily that in the nature of things they are always bound to fail, which is one of the chief relativity postulates.

To the quantum I have no such objection: only I think it may be rationally accounted for, some day, by regular mechanics. It is a remarkable and astonishing discontinuity due to the discontinuity of matter, and possibly to some unknown rotational boundaries existing even in the ether. It dominates the interchange of energy between ether and matter, and lies at the root of all radiation processes. The discovery of the discontinuity of electricity was most important; the discovery of the quantum is of perhaps equal importance. At present in dealing with the quantum we are in the midst of physics and yet seem to be opening up an avenue into a region beyond physics, at any rate beyond the material aspect of physics. Similarly the discoverer of the electron, himself, has not hesitated to affix to a lecture which he gave at Girton last year the challenging title of "Beyond the Electron." Indeed, the nature of the electron, which at one time seemed so simple, though it was never pretended to be "known," is now one of the chief battlegrounds of modern physics, and its partial resolution into waves is one of the most hopeful signs of the resolution of matter into some form of ether vibration or circulation, some form of constitutional periodicity in space.

Entropy

I shall hope to return to that, but meanwhile let me call attention to the remarkable contention of Eddington about the Second Law of Thermodynamics and the doctrine of Entropy. He considers this "second law" the most fundamental law of nature, to which no exception can even be imagined, and he uses it to emphasize our conception of the progress of time, which must always proceed in the direction of increasing entropy, or energy dissipation. Time, he virtually says, differs from space in having direction, an arrow-head, like a river rather than a road. Mathematically time can be thought of as going either forward or backward, a mere difference between plus and minus; but actual time can only go forward. In this it differs from space: "right" can become "left," but "after" can never become "before." Any attempt to run time backwards would only result in hopeless confusion.

This used not to be the doctrine of W. K. Clifford. I remember his saying that if at any given instant every atom in the universe were reversed in direction, things would begin to unhappen, and the course of evolution would retrace its steps. Only he admitted that this procedure would be unstable, whereas the straightforward course was stable, and not liable to interference by any small disturbance, as the unstable course of events would be.

Eddington, however, would disagree with that. His test of time's progress is the increase of entropy. He regards a universal decrease of entropy as impossible or even inconceivable, even for a moment.

Now entropy is not a simple idea with which we are familiar, like heat and temperature for instance. It originated in thermodynamics, and has become useful in engineering, but it is not one of our ordinary conceptions, and therefore feels a little difficult. It is defined in thermodynamics so that a change of entropy means the change of heat in a body divided by the absolute temperature of that body. When heat flows uncontrolled from a hot body

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to a cold, the entropy of the system is greater than before: the cold body gains more entropy than the hot body loses, by the transfer of a given amount of heat without any work being done in the process. This kind of flow is frequent and automatic, it needs no regulation or control. When a thermal operation is under human control, as it is for instance in the working of a perfect heat-engine, there need be no increase of entropy. Heat is taken from a hot body at one temperature, part of it is converted into the energy of mechanical movement, say of pistons and flywheel, and only the balance is given to a body at low temperature. The ratio of the heat taken, to the temperature of supply, may be equal to the ratio of the heat given up, to the temperature of withdrawal. In that case the total entropy remains constant. But it is equally possible, and indeed much commoner, for no engine to be used, for no organized motion to be produced, but for the heat from a hot body to be conducted down to a cold body, so that the ratio of heat to temperature, in other words the entropy, is increased. This process, which Kelvin called the dissipation of energy, is continually going on. Hence it is said that the universe is running down, and that we have no means of reversing the operation and winding it up again. This is Eddington's test of the progress of time, viz. to watch an irreversible operation. By suitable devices entropy can be kept constant, and in that case the operation is reversible. But once an irreversible operation has been performed, there is no remedy, it cannot be undone. Time has gone on, and it cannot go backwards. Entropy has been irremediably increased.

In order that an operation may be reversible, the energy concerned must be under control. It must not be allowed to run riot. Any random operation is irreversible. A fire or a flood under control is useful, it could be employed to produce organized motion, say by a steam-engine or a water-wheel. But out of control it can only do damage. The energy is not lost, it is only unavailable, when it ceases to be under control. Milk or wine spilt on a sandy beach is all there, but it is irrecoverable. The chemicals used in warfare are hopelessly wasted. An organized army of workmen can erect a building or a bridge; a disorganized mob is a source of danger. Everything depends on organization and control.

This has long been known, but Eddington illustrates it very luminously by what he calls the operation of "shuffling." Given an orderly pack of cards, it may be hopelessly disorganized by shuffling, and no amount of shuffling will bring it back into order. Many of the processes in nature thus result in greater disorganization; and according to Eddington the irreversible disorganization measures the entropy. Entropy is disorganization. It is easy to break an orderly arrangement down, but not so easy to build it up. Yet it can be built up. Not by random and unintelligent processes truly: a mob of monkeys playing on a million typewriters will not compose a volume of poems. The only way to restore order is to apply the activity of mind. The demolition of a building seems irreversible, but by taking thought it might be restored. A shuffled pack *can* be rearranged; indeed, this is done in the game called Patience, when successful. Shuffling, as Eddington luminously says, is "an absent-minded operation." One could imagine the shuffling of a conjurer which should leave the cards in any order that he wants: that would not be an absent-minded operation. Mind is essential to organization, and organization or reorganization is a natural result of mental activity consciously directed to a foreseen end.

Hence I very much doubt whether the second law of thermodynamics has the dominating position which Eddington claims for it—at least not when we go beyond physics. He says that entropy can never be decreased; he

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means, of course, by the inorganic operations of physics. He would surely admit that it can be decreased by mental operations, that is by the operations of life and mind. They are able to take things under control, and thereby restore order out of disorganization. But this is surely very important. Life and mind bring in an element which has not yet been incorporated into physics. The era is approaching when that element ought to be incorporated. The psychic element has been too much ignored; the effort is made to limit physics or to define it so as to apply only to metrical observation and to unorganized and random processes. Live things are excluded from the laboratory except when they are mere observers; they introduce perturbations which cannot be predicted; they have an element of spontaneity and free will. There is no telling what a spider is going to do next, or for that matter a charwoman either. Such agents are requested not to interfere with the instruments, nor even to dust one's papers.

So long as we take the universe as unaffected by life and mind, the increase of order, the production of cosmos out of chaos, may be impossible. Random or absent-minded operations are useless, they only increase the shuffling, and once a thing is shuffled into complete disorder a final mess is made of it. Order cannot be restored by absent-minded action, however long continued.

But my point is (and after all it is a platitude) that life and mind are not excluded from the universe, and that therefore it need not always be running down into disorder. It may all the time be more under control than we know. At any rate the operations of life can take the random materials of carbonic acid and water and build them up into an apple-tree. Life confers upon the assemblage a specific and even beautiful form, with the marvellous possibility of continuing that organization for any length of time. This does not mean that time has gone backwards, or that time's arrow has been reversed. It means the introduction of a biological and teleological element into an otherwise complete scheme of physics.

I suppose Eddington would say that he never meant physics to include biology and psychology. He regards physical science as a limited aspect of the universe, he claims that its operations may run round in cycles, free from consciousness, under no vital or mental control, and that under these conditions entropy or disorganization would always increase. That is plausible, though even that (for the moment) I venture to doubt. At any rate I would ask him whether the formation of a crystal would not be troublesome to an observer who thought to trace the direction of time by the increase of disorganization. The random molecules in the solution achieve an organized solid form, and they do this by their own physical properties. I do not press the point, for they are not under the control of life and mind, but it would seem that even in the organic world a statement of the doctrine of entropy has to be carefully guarded; and I do claim that directly we introduce mental or even vital activity the whole law is upset.

I can imagine Eddington retorting that the physical activities of life and mind are only rendered possible because of the blaze of running-down energy emanating from the sun. I never meant, he might say, that you could not wind up a clock! Solar radiation winds up the water from the sea; there are all manner of winding-up processes even in inorganic nature, but they are all local and partial recoveries, only rendered possible by more running down somewhere else. A water-râm may pump water to any height provided a much larger weight of water descends down a smaller height. All this is ancient and orthodox doctrine. I admit, of course, that we are constantly making use of solar energy, and so is vegetation. I never suggested that

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life and mind could generate energy, I only claim that they guide it, and therefore interfere with the process of running down. Their function is mainly that of winding things up, organizing things, sorting things, introducing order. We reclaim soils, organize farming operations, building operations, construct time-tables, and carry out prearranged plans; we regulate things of all sorts. In so far as life acts at all, it is an organizing and directing power. Well, I want to recognize that on a cosmic scale.

Maxwell called attention to this function of intelligence long ago. The passage of heat from hot to cold is generally considered irreversible; the passage of atoms from a crowded half of a reservoir into a vacuous other half, when a partition between them is withdrawn, is also irreversible. Never again will the particles be sorted all into one half. The improbability is practically infinite. There is nothing to prevent all the inhabitants of London from congregating into the West End, but they are not likely to do it. Yet they might if there were some sufficient inducement. There is no obvious reason why the inhabitants of London should prefer underground passages to living in free air on the surface, but during an air-raid many of them did. And Maxwell pointed out that the diffusion of matter—and therewith the dissipation of energy—might be reversed by the intelligent activity of an imaginary being whom he called a "demon," who could witness the actual molecules in their flight, and deal with them individually. Such a being might control the molecules, as say Tilden or Suzanne controls a tennis-ball. Life is a guiding and directing principle which can undo the random operations of inorganic material, and produce results of unexpected and perhaps inexplicable beauty. Mind arranges the myriad tones of an orchestra, and lo, a symphony! Something has converted part of the turmoil of a gaseous nebula into a landscape. There is no increase of disorganization about a symphony; I am not sure that there is about a sunset. No one can claim that a rose is the product of random forces. Some people may try to think that a planet is such a product, but on the whole they must realize that they fail.

It is needless to multiply illustrations. The meaning of what I am saying is clear enough. The time has come when we ought to try to bring life and mind into the scheme of physics, and we shall not fully understand the nature of the physical world until we do. But now comes the perennial difficulty: what must be the nature of these entities if they are to interfere with and operate on matter? How can things of one category act on things of another? The first step is to reply that conspicuously they do, whether we understand it or not. And the second step is to make some attempt to understand how they do it.

Vitality and Mechanism

We find that life is always associated with a material organism so far as it is known to us at all. We find that there is mechanism underlying apparently every mental operation. A physiologist seeks to trace the mechanism throughout. Well, let us accept that idea, and see if we can find a physical mechanism available for life and mind in general, whether it be associated with matter or not. For many things there are which act upon matter and yet which are not material. Electricity, magnetism, and light are affections of space or ether, and yet they act on matter.

I have several times of late tried to suggest the idea that life and mind may be perhaps, not exactly affections of the ether, but may have some

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etheric or spatial concomitant inevitably associated with them, which enables them to exert an influence on the material world. My hypothesis is that physics and psychics are interlocked. Not that mind is necessarily associated with matter, but that nevertheless it is associated with something physical—a much broader term than material—something which may properly be dealt with in physics when the scope of that subject is sufficiently enlarged, and when the discoveries now in process of being made reach their fruition. In such speculations I am going beyond physics, but it is just beyond physics that I was asked to go.

I am now going back to some of the latest developments in modern physics to see if there is any physical agent which can be used for vital or mental purposes.

Group Waves

Observant people must have occasionally noticed that when they walked past two sets of palings at a moderate distance, they saw, in addition to the row of palings nearest them, as it were a ghostly set of palings much broader than the real, which moved more or less with them. These subjective appearances are due to the alternate coincidences, alternate agreements and disagreements, of the position of the two sets of palings, as seen by the observer. Sometimes the palings coincide in the line of vision, and then the interspaces are clear, we see through both sets; in other places the pale from the one set blocks up the aperture of the other, and so vision is obstructed, and you get a dark patch. It is these dark patches which occur at regular intervals that constitute the appearance of a ghostly travelling set of palings. Sometimes when two fences are on either side of a railway embankment near which we are walking at a lower level, the appearance is very striking and peculiar. The elevation of the objects then enables the sky to be seen through them when they coincide, and the periodic obstructions are conspicuous.

These phantasmal appearances have a speed of their own, dependent partly on the frequency of the real palings, that is on the number of them per yard, and partly on the motion of the observer. The interval between the phantasmal appearances, or what may improperly be called their wavelength, depends on many relative considerations.

The same sort of thing can occur under many different circumstances, but it always involves two sets of regular objects with either really different or apparently different periodicities, the differences being small. In the laboratory, when two separated portions of a beam of light are made to coalesce under proper conditions, the alternate agreements and disagreements in the wave motion appeal to the eye of a stationary observer as what are called interference bands. These bands are much coarser than the waves of light, and can be made quite broad; their width, in conjunction with the distance of the observer, depends on the spacing out or "length" of the constituent waves, and indeed enable the real waves to be measured. The waves of light are progressive, but the coincidental or interference bands are stationary. They represent a redistribution of energy in space.

A similar phenomenon can occur in connection with sound; but our sense of sound is periodic in time, and accordingly we get successive alternations of sound and silence, well known as beats. All these phenomena may be called generically "beat" phenomena. Sometimes the coincidences are real, so that it is a real distribution of energy, as in the case of light and sound;

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sometimes it is merely an optical illusion depending on the observer, as in the case of the palings. (When both sets of palings happen to be identical in width, or what corresponds with wave-length or frequency, the relative or apparent difference between them is due to their different distances from the observer.)

A similar sort of thing can be observed in the case of water waves, or with any waves whose velocity is dependent on wave-length. In that case the coincidences determine some special feature, perhaps a bigger wave than usual, or some other mark of identification. And such coincidental waves are known as group waves; they have a velocity of their own, which is called group velocity. This is slower than the true wave velocity, having indeed half its value in the case of water waves, the true waves may be seen passing through the group. I believe that on the open ocean patches or lumps of these group waves can be seen, preserving a sort of identity, and having a proper speed of their own. The theory of such group waves was worked out most clearly by the late Lord Rayleigh. They are a recognized phenomenon with many applications.

Two things, two different processes or functions, are involved in all wave motion, the transmission of energy and the propagation of the waves. This double aspect always exists, though in light and sound it is obscured because the speed of energy-transfer, in those special cases, happens to be equal to the speed of wave-propagation. In a dispersive medium, when wave-velocity depends on wave-length, wave-energy must travel at a different rate from wave-forms. It appears to be a general characteristic of wave-motion that energy is conveyed by the group waves. When energy is not conveyed, it does not mean that the medium possesses no energy, but that it is not able to transmit it. In other words, the speed of transmission may be nil.

It is natural to be surprised at the existence of wave-forms which convey no energy and yet travel at a great pace. I am glad to recall attention to a clear-sighted paper communicated to Section A of the Plymouth meeting of the B.A. in 1877 (see *Nature*, vol. 16, p. 343) by that eminent engineer the late Professor Osborne Reynolds. He maintains, in that paper, that the two functions, propagation of waves and transmission of energy, are independent of each other, and he instances a simple case of no energy transmission, namely a row of disconnected pendulums, all alike. By starting the pendulums oscillating, one after the other regularly, it is easy to get a wave-form advancing with a speed exactly proportional to the wave-length: the frequency is definite, the wave-length is optional, so the velocity is optional too. There is energy in the oscillation, but none is transmitted; the velocity of transmission of energy is zero; the velocity of propagation of the waves is arbitrary; it is as usual λ/T, and T depends entirely on the length of each pendulum, but λ is optional. The medium surrounding them takes no part in the action; it has virtually no properties, *i.e.* no relevant properties. One may make some of the pendulums swing more than or differently from the others and thus get a group, but the group does not travel: it and its energy remain steadfast as regards locomotion.

If we introduce some elastic connection between the pendulums, that will represent a medium uniting them, and now energy must begin to be transmitted. Energy belongs to a group of waves and travels with the group. The theory was clearly exposed by Lord Rayleigh, and can be found either in his writings (Appendix to Vol. I of his *Theory of Sound*) or in Professor Horace Lamb's *Textbook of Hydrodynamics*, chap. xii. Two component waves being written as $a \sin k(x - vt)$ and $a \sin k'(x - v't)$, the speed of group

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systems of beat or interference waves can be expressed in any of the equivalent forms:—

$$u = \frac{kv - k'v'}{k - k'} \quad \text{or} \quad \frac{dkv}{dk} \quad \text{or} \quad \frac{dv}{dN} \quad \text{or} \quad \frac{d\left(\frac{1}{T}\right)}{d\left(\frac{1}{\lambda}\right)} \quad \text{or} \quad v - \lambda\frac{dv}{d\lambda}$$

whereas the speed v of the waves themselves is $v = \frac{\lambda}{T}$ or $\frac{v}{N}$ simply.

The importance of all this can be realized when it is held, as many are now inclined to hold, that all energy (not only potential but ultimately kinetic too) is really in the ether, and that it can only travel from one place to another by means of waves. Electrical energy is certainly transmitted in that way, and there is so great a unity about all forms of energy that the idea is growing that in no other way can energy travel except in the form of etheric waves. The difficulty, which at first seemed imminent, about slow movement in some cases, as when matter regarded as a form of energy is brought to a standstill, is now overcome by the conception of group waves. Wave-forms may travel extra fast, but then the energy will travel extra slow. The remarkable thing is that the product of the speeds in ether is the square of the velocity of light. The speed at which free unmodified ether transmits both waves and energy is a mean proportional between u and v under more sophisticated conditions.

There are cases in which the group waves may become perceptible to our senses even though for some reason the constituent or component waves are imperceptible. One gets this phenomenon in wireless telegraphy. The waves emitted by a station are much too slow to affect an eye, and much too quick to affect a telephone; but by superposing two sets of nearly equal frequency or wave-length upon each other, the beats or coincidences are much more widely distributed, and arrive as group waves with a combination frequency appropriate to the slow vibrations of sound. They may still be what we *call* rapid, and give a shrill musical note when received by proper apparatus; but the combined or heterodyned vibrations are only reckoned in thousands a second instead of in millions; and it is possible to reduce their frequency further till it agrees with those used in speech and music.

The point is that waves too rapid to affect our senses can be made to affect them by the coincidences of two sets; and another point is that the velocity of a group wave is under control. These facts, thus baldly and imperfectly summarized, have been used by Schrödinger for a novel theory of matter, what is called the Wave Theory. Without attempting to trace its history, it may be said to have originated in a study of the properties of the electron and the quantum theory of light. Nineteenth-century experiments on light substantiated the wave theory of that form of ether disturbance. Electric charges, or let us say the electron, seemed to be a disturbance of a totally different character, one which had an individual permanence, with a controllable speed which could be measured; and it was discovered by J. J. Thomson to possess other properties which fitted it to become the recognized unit of the atom of matter.

And then (strange to say) twentieth-century experiments exhibited an astonishing connection between these things. Waves of light of suitable frequency could eject an electron with an energy corresponding to the frequency, and either toss it up or toss it out of the atom. Similarly when an electron fell back into an atom it emitted a train of waves of frequency

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dependent on the energy which the electron had to spare, and which it must get rid of in order to settle down into its new quarters. The phenomenon is called photoelectricity; it lies at the basis of Bohr's theory of the atom, and is intimately connected with the quantum.

Then came De Broglie, who suggested a unification of the two interrelated things, the particle and the wave, so that the corpuscular and the wave theory of light might in a sense both be true. For the quantum of light is like a corpuscle, and yet light is composed of waves. Was the converse true, and was it possible that the electron was itself a group wave? Or are group waves associated with a travelling electron, their frequency or rate of vibration being dependent on its energy of travel? This question was put to the test, and has been answered in the affimative by several experimenters, notably by young George Paget Thomson, the Professor of Physics in Aberdeen University, who has fired electrons of known energy against a photographic plate, and has shown that the point of impact is surrounded by diffraction or interference rings representing radiation of a corresponding frequency. The theory connecting frequency and energy, that is connecting the length of the waves with the momentum of the particle, as suggested by De Broglie, was verified. The waves when measured were of the right size.

$$\lambda = h/mu$$

His father, the present Master of Trinity, has carried the theory further, and has expounded the subject in his lecture "Beyond the Electron," already referred to; describing it in words in the body of the pamphlet, and giving a mathematical appendix at the end, all extremely worthy of study, and clearly set forth.

One remarkable outcome is that the difference between a wave and a particle is disappearing. We have to do with something that is neither, and yet shares the properties of both; something for which the name "wavicle" has been suggested. The constitution of an electron, notwithstanding its utterly minute size, is by no means so simple as we used to think it might be. In the outer orbits of an atom, a long way from the nucleus, an electron behaves something like a little sphere, revolving round a centre of force under astronomical laws. But an electron nearer the central nucleus, and therefore travelling at high speed and subject to stiff control, does not seem to be located at a point at all, but spreads out over the orbit like a succession of stationary waves. The whole thing is rather complicated. All I want to insist on is that the difference between a wave and a particle is one of degree rather than of kind. A group wave of certain frequency may appeal to us as if it were a moving particle of given energy; and inasmuch as matter is composed of such particles, we may call if a group-wave theory of matter.

Schrödinger's theory carries the investigation further. Matter must obey the laws of dynamics: are group waves competent to obey such laws? The laws of dynamics are summed up in their most general form by the analytical methods of Lagrange and Hamilton. The Hamilton equations can be identified with the Principle of Least Action, which may be briefly and inadequately expressed as saying that the product of energy and time tends to a minimum, or that the path is determined by the vanishing of a certain integral which gives the variation of this product called "Action." And this principle of Least Action may be applied both in optics and in mechanics. In optics it was known as Fermat's theorem. Schrödinger recognized that the same principles served for both, the very same equation might be interpreted

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optically, or might be interpreted mechanically. To give a rough illustration of this:—

In a wave equation the wave velocity v enters thus,

$$\sin p\left(t - \frac{x}{v}\right);$$

in the Lorentz transformation an oscillation to an observer travelling with speed u is

$$\sin p\left(t - \frac{ux}{c^2}\right);$$

so if $v = \frac{c^2}{u}$, the two expressions have similar form, in fact are identical. The optical velocity v and the mechanical velocity u are reciprocally related.

The stormy or perturbed areas characteristic of group waves were thus found (when reasonably small) to move about under precisely the same laws that govern the motions of particles in ordinary mechanics. The frequency of the waves (their rate of vibration) appeals to us as the energy of the particle; and if acted on by other bodies, that is if they are immersed in a field of force, they acquire another peculiarity which may be called a potential frequency dependent on the field in which they are, and representing their potential energy in that field. So this highly important part of Schrödinger's theory may be summed up, as it is summed up by Eddington, thus:—

> "The equations for the motion of a wave-group with given frequency and potential frequency are the same as the classical equations of motion of a particle with the corresponding energy and potential energy."

Now this is a tremendous generalization, and no wonder it has been received with enthusiasm. What it all means we have still to find out, but it evidently means something important. Every one is ready to admit that waves must be an etheric or spatial phenomenon; and now it is found that the right sort of waves are just what have appealed to our senses as matter, and what physicists and engineers have dealt with from time immemorial. The physics of group waves has risen to high importance.

But group waves are, after all, a resultant outcome of superposed constituent waves. They are a combination phenomenon, an organization, as it were; they are a localization of other waves much smaller than themselves, which are travelling at some speed dependent on their wave-length. The group waves have another speed, differing therefrom by an amount exactly determined by this dependence. This subject is so definite and simple that a little elementary algebra may be permitted to indicate the precision of our knowledge about it.

What is called the wave "frequency" means their recurrence in time, their number per second. It is the reciprocal of their time period, or

$$\nu = \frac{1}{T}$$

What is called the "wave number" means their recurrence in space, the number per centimetre or per yard. It is the reciprocal of the wave-length, or

$$N = \frac{1}{\lambda}$$

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The wave velocity may be represented either as the ratio of λ to T, or as the ratio of ν to N.

Let us say $$v = \frac{\nu}{N}$$

When two waves of slightly different frequency, ν and $\nu + d\nu$, are superposed, the resulting amplitude will vary periodically from double value to zero, and thus advancing groups or group waves will be formed, and the speed with which they travel will depend on the difference of ν and the difference of N (*cf.* p. 534). Rayleigh's quite general law for the speed of group waves is

$$u = \frac{dv}{dN}$$

Whether the velocities here denoted by u and v differ, and how much they differ, depends entirely on how much the main wave speed v depends on wave-length. The general law, which differs only algebraically (that is in nothing but form) from what we have already written, is that the velocity of group waves is

$$u = v - \lambda\frac{dv}{d\lambda}$$

If v is independent of λ, then v is equal to u. If v increases with λ, v is greater than u. If v decreases with λ, then u is greater than v.

In all this, so far, there is no reference to the ether. The theory applies to all kinds of waves. For instance, those large elevations on the surface of the sea travel at a rate varying as the square root of the wave-length,

$$v \propto \lambda^{\frac{1}{2}}$$

In that case $$u = \frac{1}{2}v$$

For minute ripples on a tumbler or a teacup

$$v \propto \lambda^{-\frac{1}{2}}$$

And in that case $$u = \frac{3}{2}v$$

Or, in general, if $$v \propto \lambda^n$$

$$u = (1 - n)v$$

It is all amusingly simple once the theory has been given.

In sound and light v is really independent of λ, or $n = 0$. And so in those important subjects $u = v$. That is why group waves have not been attended to in acoustics and optics. Every size of wave there goes at the same rate—a rate depending only on the medium.

But when we come to the ether with its other remarkable properties, we can proceed much further. It is characterized by a constant velocity c, and in the simple case of light we know that $u = v = c$. That is true for the innate electrical properties of free ether, the properties with which we are most familiar. It is true except in so far as it is interfered with by the presence of matter or of free electric charges. Matter reduces the speed of wave transmission: conversely a number of free electric charges increases it.

So the ether has other functions to fulfil, and we need not assume that

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there are no waves which can travel faster than c. In electrified space it turns out that waves can travel quicker than light.

But still c appears dominant. Why? What we know chiefly about the ether are its electric and magnetic qualities. Everything that we are accustomed to depends on them. They are symbolized by Faraday's K and Kelvin's μ. Maxwell showed that light was also an electromagnetic phenomenon, and that its speed was

$$\frac{1}{\sqrt{K\mu}}$$

This is the velocity that we call c, and it is a consequence of the electromagnetic properties of the ether. In free ether it is constant for every length of wave. But inside transparent matter it is diminished, while inside an electric region it is increased. Everywhere that velocity c is dominant. All other speeds are connected with it in some way.

We now begin to find or suspect that the ether has many other properties. Gravitation does not seem to be electrical; and there may be others. There may be vibrations of excessive frequency travelling at a higher speed. That speed is assumed to be dependent on wave-length, probably by some such relation as

$$v^2 = c^2 + b^2\lambda^2$$

for that is the law of dispersion in a known kind of super-dispersive medium, such as is constituted of electrified ether. As to the other speed u, the velocity of group waves is always dependent on the velocity v, as indicated above,

$$u = v - \lambda\frac{dv}{d\lambda}$$

Combining these two equations together, we get by simple algebra the profoundly interesting result that u and v (so determined), though they can vary enormously, are interlocked by the unalterable value of c, which is the geometric mean between them. The product of u and v multiplied together would in this kind of dispersion be constant and equal to c^2. So that whenever u decreases v increases, and if u is ever zero, v must be infinite.

Now v in a given medium is not under our control; it has to adjust itself automatically. But u is sometimes under our control, just as far as matter is; we can deal with some group waves, since they appeal to us as matter particles. We may be puzzled to measure u, the speed of our own travel through the ether; we know it cannot exceed c, but we know no reason why in exceptional cases it should not reduce to nearly o.

(Perhaps it can hardly be said that we are sure that the dispersion law

$$v^2 = c^2 + b^2\lambda^2$$

holds for the minute waves we have been considering, they have not yet entered physics in their own right; but for want of better knowledge we are assuming this as a reasonable law. If that is not true, then it may not be true either that

$$uv = c^2$$

There is sure to be some law connecting u and v, and this one is by far the most probable, but in what way that law involves c may be left at present moderately uncertain.)

It is tempting to add, what Sir J. J. Thomson has pointed out, that the coefficient b in the above dispersion formula represents the smallest frequency

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which these waves can have. This minimum is a very high frequency, beyond that of X-rays, and there is nothing to prevent the existence of still higher frequencies. The wave-length associated with a particle flying at the speed u we know both by theory and experiment to be given by

$$u\lambda = \frac{c^2}{b}\sqrt{\left(1 - \frac{u^2}{c^2}\right)}$$

Abbreviating the so-called FitzGerald contraction factor $\sqrt{\left(1 - \frac{u^2}{c^2}\right)}$ into $1/\beta$ as usual, the group-wave frequency follows algebraically from this equation, $\beta bu\lambda = c^2$, as

$$\nu = \beta b$$

This frequency will have a value directly proportional to the energy of the particle, for it is generally recognized now that

$$mu\lambda = h, \quad \text{or} \quad h\nu = muv = mc^2$$

So that

$$b = \frac{m_0 c^2}{h}$$

Reckoning b thus, it comes out

$$1{\cdot}24 \times 10^{20} \text{ vibrations per second.}$$

Whereas Professor G. P. Thomson's experimental measurements of the diffraction patterns or rings, obtained on his photographic plates from high-speed electrons, make the minimum frequency

$$1{\cdot}08 \times 10^{20} \text{ vibrations per second,}$$

which, though not exactly the same as the above calculated b, is of the same order of magnitude.

It may be added that when the speed of a particle is insufficient for waves to accompany it, it is still able to interact with an electrostatic field, and this represents the sluggish residue of the vibrations. As the particle approaches rest, the magnetic part of its energy vanishes, its energy is then wholly electrical.

Sir J. J. Thomson has shown that in a super-dispersive medium the magnetic energy need not equal the electric energy of the waves: "the difference between the electrostatic and magnetic energy is on the average equal to the kinetic energy possessed by the charges which give rise to the dispersive quality."

Lord Rayleigh first showed that the rate at which waves in general transmit energy across unit breadth depends not upon the speed of the waves themselves but upon their group velocity, which in the case of water waves is only half as great as v. The amount of energy transmitted in unit time is u times the average amount of energy in unit length of the system of waves.

Locomotion and Energy

It will readily be perceived that the only reason for treating a group wave as due to the superposition of *two* similar waves of slightly different pitch is because that example is so simple. It is easier to add together two sines than it is to add a multitude, but in nature we must assume that, if there are ether wave forms at all, there must be an immense number of them travelling with all sorts of speeds between c and infinity, and with all sorts of wave-lengths. The ether I regard as the seat of tremendous rotational energy, but none of this need travel with the waves; locomotion is not a feature in free

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ether, locomotion is only introduced when the ether is modified into particles, or what, as we now think, is much the same, into group waves. A group wave or region of special disturbance involving energy can travel at any speed from O to c, and that is how locomotion comes in. Whether there are any quantum-like discontinuity conditions among the wave-lengths possible in free ether, or whether the variation in wave-length is continuous, I do not know. In neither case will there be transmission of energy except in isolated or specialised regions in which group waves have been formed, or (more generally) in which particles such as electrons and protons, whatever their nature, have crystallised out of the unmodified ether and taken on the power of locomotive transmission of energy and substance. It may be that only thus is what we call "substance" born, and that inertia then comes into being; though, as I think that energy is there in stationary rotational form all the time, it seems to me that the whole of the ether is substantial and is endowed with the property which when displayed we call inertia. Weight, however, or gravitative attraction, I would associate only with the modified regions that are susceptible of approach and recession or other varieties of locomotion. Some sort of identity seems necessary in order to make gravitation an effective reality. At the same time the whole ether is subject to immense intrinsic pressure, and the gravitational influence displayed by localised particles may be and probably is a residual effect of that pressure.

Guidance by Wave-Forms without Energy

I have already answered the question how waves of any kind can travel faster than light. Such waves seem to be mere forms, they are not open to investigation, they make no appeal to our instruments or our senses, no signal can be sent by them, for they convey no energy, the energy is all associated with the group waves. When those group waves travel slowly, the constituent waves are quick. The group waves follow a path determined by the constituent waves, which therefore act as a guiding and directing agent, elusive in itself, but important as exercising control. The present idea is that certain etheric group waves constitute matter, and that this is a form of energy capable of being guided by something other than energy, something which acts as a guiding or directing principle. The guiding waves and the energy waves are interlocked or interacting, and yet are distinguishable from each other.

The whole thing is puzzling, because we haven't got to the bottom of it, but the indications of theory about velocities can at least be represented by a simple diagram. Draw a semicircle, let the base represent c, and draw a slant line from one end of the diameter to meet a vertical from the other end. The length of that slant line is v, the wave velocity, and the portion of it intercepted by the circle is u, the group velocity. The amount of slant may be anything according to circumstances, from 0° to 90°. At 90° the matter or the group wave or the energy would be at rest—whatever that means—and the speed of the constituent waves would be infinite. An approach to the other extreme case is what we encounter in the Heaviside layer through which wireless waves are travelling; the signals travel with the group wave velocity, nearly equal to but always a little less than that of light. So then the three velocities, u, v, and c, are very nearly equal; but v is a little bigger than c, and u a little less. The signals follow the path of the component waves of which the upper portions travel faster than the lower, so that they can curve round the earth and reach the Antipodes, as explained by both Eccles and Larmor.

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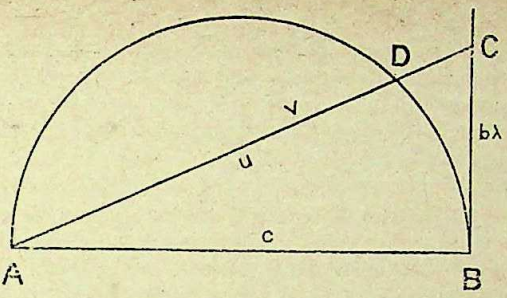

If $AB = c$ and $BC = b\lambda$,
then $AC = v$, the wave velocity or speed of the guiding waves, quicker than light;
and $AD = u$, the group velocity or speed of the energy waves, slower than light;
the curve being a semicircle on AB.

It is plain that $u = c \cos \theta$
while $b\lambda = c \tan \theta$;
so $ub\lambda = c\sqrt{c^2 - u^2}$
as said above (see p. 541).

Psychical Speculation on this Basis

I must not dwell on these physical considerations any more, for I want now to ask a question which I imagine philosophers and psychologists of the future will have to tackle, however remote from their present ideas such a conception may be.

Hitherto we have had no permanent physical basis for the familiar entities called life and mind, which I regard as essentially one and the same thing in different stages of development. The group waves have been found to subserve the functions of matter. What use is to be made of the constituent waves? They are not of a totally different character from the group waves, they interact with them, they guide them, indeed they make them possible, they are the substratum of everything, but they make no sort of experimental appeal: our observations are limited to the group. With the group only can we deal experimentally or observationally. Yet surely the component waves must have some function. We may be using them all the time without knowing it. It is found that those constituent waves are a guiding and directing influence on the particles, it is those which determine the path of the energy. They constitute a guiding and directing agent, they have no energy of their own, but they achieve results which would not otherwise be achieved.

It must be apparent that these are the kind of assertions which we have been constantly making about life. Life is a guilding and directing principle. It controls matter and energy with a certain element of spontaneity, and yet it differs from both. What we have wanted is a physical basis for such activity. The presumptuous and hypothetical suggestion which I want to risk is that these constituent waves of excessively high frequency, far higher than anything we have yet apprehended, may be the physical basis of life and mind. The ether is hypothetically full of them, their nature is unknown, and yet they are responsible for everything that exists. I suggest that they form the physical basis, though not in the least a material basis, for an idealistic

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interpretation of the universe, in which life and mind are supreme. They are a concomitant of the slow-moving group waves which constitute matter, and they can travel at a nearly infinite pace—one is tempted to say like thought.

Bergson held that the Ultimate Reality, for purposes of evolution and development, had differentiated itself into two interacting portions, one of which we knew primarily by instinctive apprehension, the other of subordinate and, so to speak, lower grade, which appealed to us through our senses. He suggests that it was degraded in order to get the variety and the interest and the possibilities associated with two interacting things. By degrading a portion of itself, the original supreme entity could thus rise on stepping-stones of its dead self to higher things. A rise in the scale of values, a development of existence, might thus be produced which could be attained in no other way. Monotony of existence would cease, struggle and effort would begin, if life for a time could leave the constituent waves and enter the groups. For the groups have an identity of their own; and life might become thus individualized. It would thus acquire new powers, new difficulties, new experiences. The interaction of ether and matter is studied under radiation, which is an electrical process of interchanging energy; and the result of the interaction is either the emission or the absorption of ether waves travelling with the velocity c. These are familiar in physics, and are the basis of optics. The group waves travelling with the velocity u are familiar in mechanics, and constitute the basis of matter. What about the waves with velocity v?

My expectation is that some day psychologists will find that these at present dimly inferred and barely apprehended high-frequency periodicities may be the instrument utilized as the physical basis for that other highly familiar experience of the universe, our own life and mind, the general nature of which, apart from any physical vehicle, we are acquainted with by first-hand experience.

How spontaneity and free will and planning and purpose can this be given a physical basis I do not fully see; but they must have a physical basis, else they could not interact with matter. The problem before us is only beginning; but it is in this way that I would seek for a solution. Not in Eddington's way, by a postulated defect in the law of causality when dealing with small individual particles. Break down causality, and we are left with chance. That is wholly unsatisfactory. It may be true that the jumps of electrons in the atom cannot be predicted, they seem to occur by chance. But not in that way would I aim at freedom, for chance is no solution. The laws of Probability only apply to a multitude, not to an individual. There must be a cause for those jumps. And the cause is already being sought. Some physicists attribute radio-activity to the impact of high-frequency radiations. The recently discovered cosmic rays are already thought to have an influence on biological phenomena, as they certainly have an influence on atomic processes. High-frequency vibrations are now at last being discovered and attended to.

So now that we find that matter may be a localized peculiarity in the midst of an ocean of excessively rapid periodic influences, there is plenty of scope for the idea that the seat of our intuitive apprehensions is to be sought there, that whatever their ultimate nature may be, there is their habitat. We may presume that those periodicities are truly animated, and that they constitute the agencies or instruments through which we operate in the material sphere. The whole universe seems to be an animated structure far beyond our present apprehension; intelligent beings are making use of its constitutional periodicity; and upon that periodicity or wave structures we ourselves and all animated beings are wholly dependent for any display of our vital and mental activities.

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Influence of Organization

We may try to carry the subject a little further. I remind you once more, what mathematical physicists have told us, that although the great bulk of ether is for most practical purposes a homogeneous medium in which waves of every length travel at the same rate, yet any region of it which contains electric particles will be what is called a super-dispersive medium, in which waves may travel at any pace according to their wave-length. There may be group waves in a medium of any kind; but the peculiarity of a super-dispersive ether is that its group waves travel slower than light, while the waves which constitute and guide them travel quicker. The velocity of light is the geometric mean between the two other velocities of transmission, that of the group wave and that of the constituent wave. The possible implications of this we have already attended to.

We are also told by Sir James Jeans that an electrified particle, say an electron, so long as it is free and not associated with any other particle of opposite sign, is incompetent either to emit or to absorb light. It can be pushed along, or rather guided, by waves; but it has no means of absorbing them. To be active as a radiator or absorber it must be associated with another charge of opposite sign, that is, it must be a constituent of an atom. An element of organization has been added. In any organized system of electrons, such as an atom, the individuals have acquired a new property due to the organization. They enter into a new relation with the waves in space, they can now absorb or emit quanta. An incipient element of energy-exchange and effective activity has been introduced. Somewhat as the energy of gunpowder is more effectively utilized and absorbed by a bullet when it is loaded into a gun, so that the bullet is fired off in one direction while the gun is fired in the other, with equal opposite momenta though with very different energies. Omit the gun, and the bullet is not projected. Organization into an atom has improved the conditions for energy interchange.

It is perhaps the most incipient example of what has been called "emergent evolution," an organization acquiring functions not possessed by its constituent elements while separate. Common experience illustrates this matter further. Neither an atom of hydrogen nor an atom of oxygen has any of the properties of water when separate: they acquire those properties by combination. So a molecule has properties denied to an atom: and so also an organized assemblage of molecules is found to have properties which the separate molecules do not possess. An organic compound is an assemblage of a large number of molecules; and if the molecular compound is sufficiently complicated, so as to be organized into a portion of protoplasm, then a further property makes its appearance. The protoplasmic molecule has the chance or the opportunity or the potentiality of being endowed with vitality. It need not be living, but it may be. It has become able to receive and store the unknown spontaneous guiding function that we call life. It may exhibit the properties of a living cell; life has found it possible to enter matter and become incarnate. And when these living cells have aggregated still further and become organized into a portion of brain, then a still higher function is able to manifest itself, the brain cells can then act as the material vehicle for thought and mind. The main realities in the universe lie in the region of the ideal, the supersensual, not in the material vehicle which partially displays them.

Without attempting any explanation, I claim that these are facts of common experience. We have learnt them by observation of the things around us. The explanation is still to seek. But it is instructive to realize,

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and it has often been emphasized, not only by Professor Lloyd Morgan, but also in other forms by General Smuts and Professor Whitehead and Dr. J. S. Haldane, among others, that an organism as a whole has properties which do not belong to its constituent parts, and that we ourselves, being such organisms, are conscious of what those properties feel like, and are aware of what they can do. We cannot reason it out, but we know it by direct experience. It is surely of interest to find, what seems to be indicated now by the higher physics, that this gradual increase of function can be traced down in regular succession till we reach the simplest units of all.

Now the question forces itself upon us, how can these new properties emerge if they are non-existent in the elements? I would not venture to say that they are not existent: I would only say that they are not displayed. Emergence means demonstration or display; it means recognition of what may have been latent before. We find that animation is only displayed by material aggregates which have developed into organisms. Analysing the organisms, we lose the animation, just as if you microscopically examine a picture you lose its meaning. We analyse the organs of mental activity into protoplasm, that into organic molecules, the molecules into atoms, the atoms into electrons, and the electrons more or less into group waves, while the waves themselves are periodic disturbances in an unknown omnipresent medium with physical properties, which is sometimes identified with space.

I feel compelled to assume that the latent possibilities of animation are already existent in space, but that they cannot come to fruition or display themselves, at any rate to us in our present condition, unless they interact with matter. And it appears that physics is now helping us to trace the gradual possibilities of interaction between space and matter. What we have found, or are tending to find, in space are certain excessively rapid periodic disturbances; though the word "disturbance" is not a good one, since it suggests irregularity, which is not intended. It seems hardly legitimate to call them periodic *motions*, though for want of a better idea that is how we are inclined to think of them; we are only entitled to say a periodic "something," constituting an excessively fine-grained structure, of nature unknown, which here and there has aggregated itself into group waves. These either constitute or are associated with what we begin to recognize as an electric charge, which thus for the first time enters the field of physics, and by its further interaction with other charges, builds them up into atoms and molecules and all the other structures that we are acquainted with, and makes them move in accordance with certain laws of motion which we have more or less detected.

Our particular apprehension is limited to matter, and we know that either directly or indirectly some of that matter is animated. It may be that there are other organisms in space more immediately in touch with its constituent periodicities, and not needing the aggregation into material forms. The life and mind which in such a medium are to us latent, and seem practically non-existent, may be, I suggest, only non-displayed because of our own limitations. All the possibilities that we have perceived must be there in some sense from the beginning; and all that we observe or infer is, first, the material vehicle which has demonstrated those properties, and then the more elementary forms which conceal them. But these are still the physical or the etheric bases utilized by, though not demonstrating, the higher unknown attributes of which we, through our higher organization, find in our own consciousness some surprising glimpses. We do not understand those higher properties any the more for our analysis. They are attained by direct apprehension; but the research into the physical

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vehicle, which presumably all the time they must be utilizing, is a permissible one. Part of the analysis has been conducted by the legitimate method of physics, and part by the illegitimate speculation which must be treated with suspicion and caution and constant emendation as going "beyond physics."

Professor Muirhead, the Chairman, proposed, and Sir Lynden Macassey, K.C., M.A., LL.D., D.Sc. (Chairman of the Executive Committee) seconded, a vote of thanks to Sir Oliver Lodge for his illuminating and entrancing address. This was carried with enthusiasm.

A resolution for the adoption of the Annual Report and Statement of Accounts for the year ended March 31, 1929, proposed by the Chairman and seconded by Sir Lynden Macassey, was put to the meeting and carried unanimously.

The proceedings then terminated.

MEMORIAL TO PROFESSOR L. T. HOBHOUSE

THE recent death of Professor Leonard Hobhouse came as a shock to his friends, who had looked forward to his having a good many years of further work and of development of the unique position which he has held in the study of the social sciences. We feel sure that many of those who directly or indirectly have come into contact with his work will wish to help in the establishment of some Memorial Fund with which his name may be permanently associated, and which may be used to assist in the perpetuation of his influence.

We accordingly invite subscriptions to such a fund. We hope that those who subscribe may leave us who sign this appeal, as a Committee representative of the many sides of life which Professor Hobhouse touched, to frame a scheme for the Memorial, and to settle at a later date whether any fund raised can be used best for a lectureship, a scholarship, or the publication of studies in the social sciences.

Subscriptions may be sent to Dr. G. P. Gooch, 76, Campden Hill Road, W.8, who has agreed to act as Treasurer of the fund.

S. Alexander
W. H. Beveridge
Victor Brandford
H. A. L. Fisher
Morris Ginsberg
G. P. Gooch
J. L. Hammond
J. A. Hobson
Gilbert Murray
Percy Nunn
Herbert Samuel
C. P. Scott
Hubert Llewellyn Smith
Arthur Steel-Maitland
Graham Wallas
Beatrice Webb

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PHILOSOPHICAL SURVEY

PHILOSOPHY IN ITALY

MARTINETTI has published an important book on moral freedom,[1] divided into two parts, the first of which deals with the historical development of the problem, and the second expounds the author's own conception. He distinguishes in the manner of Kant three degrees of theoretical activity—feeling, understanding, reason—and corresponding to each of them he posits a practical degree of will, and hence of freedom. At no stage of this process, however, does he consider the mind as freed from the bonds of causal determination, that is, as will unbiased as to choice. Such impartiality, if it ever existed, far from affording a sure basis of freedom, would turn the mind into a realm of incoherence and caprice. Liberty is not indetermination; at all its stages a certain determination is always implied. "There is therefore no contradiction in assuming the act of consciousness as causally and necessarily determined by its antecedents, and at the same time as a spontaneous act. The sense of power, of reality, of dominion, that manifests itself in it is therefore not an illusion. The 'I' that arises in the act of consciousness subjugates the past to a certain extent, exacts a new law, founds a new necessity which is identical with its own being" (p. 376). "Liberty and necessity, therefore, do not coincide in a neutral unity in the act of willing; on the contrary, the act of willing represents a victory of freedom over necessity by the very fact that it converts necessity to its own use, and, becoming aware of it, frees itself therefrom. Consequently one cannot speak of freedom as a peaceful possession of the mind, and as a faculty which is automatically set in action, but as a continuous process of liberation which overcomes the obstacles of external circumstances and even the internal resistances of passivity and psychological automatism. This liberation has, as we have said, various stages. In the lowest sphere of feeling it is pure spontaneity, that is, a sense of the action not hindered but emerging as a primary and new synthesis of the conflict of the impulses and tendencies. In the higher grade, corresponding to the understanding, it is practical freedom, and is distinct from animal spontaneity, which is too much immersed in the present, and still a slave to the object of the moment, precisely because thought, which is the motive force here, rises above the contingencies of time and embraces at once the present, the past, and a zone of the future. Hence more spiritual elements are involved, and the human personality is more completely concentrated in the action; but at the time same there is an infinitely greater extension of the field in which man must struggle and suffer. Great purposes fill his whole life, and give it a sense of depth and value; but death and misfortune, foreseen, feared, and expected, throw their shadows over it. Hence practical freedom has a graver and more composed aspect. In its complexity it is to spontaneity what active and thoughtful manhood is to thoughtless and lighthearted youth" (p. 390).

"But practical freedom is not yet perfect rationality; at this stage man lives the life of the senses all the time, although he introduces into it dis-

[1] P. MARTINETTI, *La Libertà*, Milano, Libreria Editrice Lombarda, 1928.

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positions and principles which are not derived from sense. On the other hand, reason introduces into life an unforeseen revelation; it snatches the man of the world abruptly from his own interests and his own finite conceptions to confront him with the most serious and terrible problems, in whose presence, once the mind has been profoundly stirred, all the cares and the grandeurs of earth are no more than fleeting and worthless appearances. The understanding is the faculty of the empirical life, of its cares and problems; reason is the beginning and the foundation of moral and religious life" (p. 393). Differing from Kant, however, who makes of rational ideas a transcendent and, from a theoretical point of view, an unattainable world, with a consequent disparity between the conclusions of theoretical reason and the exigencies of practical reason, Martinetti sees in them the ideal termination of a train of thought which, by a legitimate development and without any sudden transitions, goes beyond the limits of the empirical validity of the concepts, to penetrate to their innermost being. Only in this sphere have we the true freedom, which is moral freedom: subordination to a law, a form, a personality, which are reason itself, living and present in man. And here, better than anywhere else, is revealed the antithesis between liberty and unbiased freedom of choice, the former consisting not in the apparent alternative that is offered to reason between good and evil, but in its ever-closer participation in the inflexible necessity of good. Not the *posse peccare vel non peccare*, but the *non posse peccare* of the Christian conception, freed, however, from those theological presuppositions that annul autonomy—that is the ideal end of free will.

The author's applications of these philosophical premises to the problems of so-called civil liberty are important. While he accepts many Hegelian views, he rejects fundamentally an idea which, formulated by Hegel, but with many qualifications, has been taken up and disfigured in recent Hegelian criticism—the idea that freedom consists in the perfect subordination of the individual to the general will incarnate in the state. "Although," replies Martinetti, "the state represents impersonal and collective reason, it is only the rationality of the inferior life, which is disciplined by law alone. All that constitutes the life of the true spirit transcends the horizon and the capacity of the state. Hence to set as the limit and the ideal essence of liberty its identification with the collective will of the state is to propose to humanity the social ideal of the ants and the termites, a transformation of the state into a collection of servitors without personality and without will. To what end, then, all this colossal mechanism which has no function other than that of defending and nourishing its slaves, who in their turn have no end other than that of yielding to the state in all their activities and of sacrificing themselves for it?"

The critical edition of the *Dialogues of Love* of Leone Ebreo,[1] recently published by Caramella, gives us in a form as nearly perfect as possible one of the most characteristic works of the Italian Renaissance, which had lain for a long time buried in the old sixteenth-century editions. It is curious to note that Italy owes to a foreigner its first philosophical work of large scope written in the vernacular. Leone Ebreo was born at Lisbon between 1460 and 1465, and was driven to leave his country and emigrate to Italy by the anti-Semitic persecutions which raged in Portugal and Spain, whither he had first fled. Even in Italy he led a wandering life, urged hither and

[1] LEONE EBREO (Giuda Abarbanel), *Dialoghi d'Amore*, a cura di Santirio Caramella, Bari, Laterza (Scrittori d'Italia), 1929.

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thither, now by the vicissitudes of the war between France and Spain, now by the invitations to stay at the princely courts of the peninsula that his great renown as a physician procured him. The *Dialogues of Love*, that he began about 1501, were written during the halts of his pilgrimage; they were to consist of four parts, but they terminated with the third, which was of greater bulk than those preceding it and of more organic contexture. The doubt raised by some students that the original redaction might have been in Latin or Spanish or Hebrew is refuted by Caramella in one of his learned critico-philological notes. The first edition of the work appeared in Rome in 1535, printed by Blado, and it was followed by numerous others, fully fourteen in the course of the century. Among them there were four from the Aldine Press, which all depart more or less from the original through literary and formal embellishments, and some interpolations in a Christian sense. The first Aldine edition is that of 1541; the second, of 1545, bears on the frontispiece, beside the name of Leone, the qualification "of the Hebrew nation, and since turned Christian," which has given rise to the suggestion that the philosopher was converted in his last years, and that he was still alive after 1541. But these are groundless conjectures; the facts are that after 1521 we have no further notice concerning Leone Ebreo, and that the 1535 edition speaks of him as a citizen of the kingdom of the shades, that is, as already dead. The hypothesis of the conversion is therefore wholly gratuitous; as Caramella rightly conjectures, the notice on the frontispiece of the Aldine edition is a customary expedient to obtain licence to print at a time of excessive severity of the censorship and of uncertainty regarding the fortunes of the book. And if one considers that Leone had fled from Spain to withdraw himself from the solicitations of Ferdinand the Catholic, who would have continued to load him with favours and honours provided that he had had his son baptized, and that even in Italy he had never found an abiding-place on account of religious hatred, one may argue almost with certainty that he died in the faith of his ancestors. The present edition of the *Dialogues of Love* is based on the *editio princeps* of 1535, collated, however, with the Aldine editions.

The importance of the work is well known to students of the philosophy of the Renaissance. Two studies on it have been published recently, one by a German and the other by an Italian,[1] which represent notable contributions to the interpretation of the *Dialogues* and to their historical setting. The philosophy of love is one of the themes which were most fully and successfully developed in the Italian Renaissance, linked on the one hand to the Petrarchan tradition, and on the other to the reflorescence of Neo-Platonism through the work of the Platonic Academy of Florence. Marsilio Ficino's famous commentary on the *Symposium* released a flood of philosophical and erotic literature in which many of the greatest literary men of the sixteenth century tried their strength, from Castiglione to Bembo, through a crowd of minor writers whose works have lately been collected in part.[2] In this literature Leone Ebreo has a very conspicuous place because, philosophically better endowed than the others, he succeeds in determining the most profoundly speculative significance of the problem. His conception gives a powerful unifying relief to reality, thanks to the bond of universal love which unites and animates its parts. Eros, thus understood, is, as Leone expressly declares himself to be aware, a much more comprehensive principle than the Platonic

[1] G. Saitta, *La Filosofia di Leone Ebreo* (Filosofia italiana e Umanesimo, Venezia, 1928); A. Pflaum, *Die Idee der Liebe-Leone Ebreo*, Tübingen, 1926.
[2] *Dialoghi d'Amore del Cinquecento* (Scrittori d'Italia, Bari, Laterza).

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Eros from which it derives. He is not only the dæmon son of Penia and Poros, but in a certain sense the true demiurge, the creator and disposer of the cosmos. With an imposing syncretism there flow into the doctrine of Leone the Neo-Platonic theory of the hierarchies of emanations, the idea of the universal animation of nature proper to the Renaissance, the cult of beauty and form, together with cabbalistic and Judaic motives, especially in what concerns the divine attributes, the creation and eschatology. This work has exercised a notable influence on later philosophy, especially on the structure of the dialogues of Bruno and on the Amor Dei of the Spinozan philosophy; but in Spinoza it has a more rational character, while for Leone it has a mystical colouring.

Mondolfo[1] has written a history of Greek philosophy, deriving it directly from the sources, without apparently adding to it anything of his own. But it is clear that this praiseworthy discretion conceals and dissimulates a long labour of selection and co-ordination to the end that, from the disconnected and often contradictory accumulation of texts (fragments, doxography, scraps of treatises and dialogues), a single harmonious design might be extracted. And, noting the distribution of chapters and paragraphs, and following the unobtrusive web of the notes prefixed to every group of documents, it is clear to the eye of the expert that Mondolfo has mentally composed his history of the thought of the ancients, and if he has not written it *in extenso*, he has nevertheless placed the reader in a position to reconstruct for himself, without any apparent guidance, the way he has traced out first. Certainly his is no rigid guidance like that of railway lines; wherever questions are raised on the interpretation of an author, he presents with impartiality the most significant passages in support of the particular theses under discussion, without imposing his own opinion; but even here he manifests a certain art of conveying his views without putting them into so many words, because on most occasions the indication of a solution is given by the very way in which the question is put. Books like this are very suggestive, especially for young students, who are led on to collaborate and integrate, and to learn to take account of the fact that everything has not been already said by other people, but that the way of research is always open to those who are desirous of undertaking it. In this manner Mondolfo's book differs not only in its more restricted mass, but also in its spirit, from the great collections of sources such as those of Diels, Usener, and Arnim; each fragment reproduced and translated has its own place in an organic pre-arranged complex, like the signs which are traced on outline maps of the kind called silent because they serve the purpose of making the students speak. The work accomplished by Mondolfo is also noteworthy for the considerable number of documents which he must have examined and from which he has made a selection. Where there existed earlier collections or where the material was more restricted, his work was somewhat lightened; but from the post-Epicurean philosophy onwards he had to work with scanty aids, and to find his way through a large mass of sources; and it must be acknowledged that these parts are not inferior to those preceding.

Lamanna,[2] on the other hand, has written in full his history of ancient philosophy, confirming anew those gifts of perspicuity and clearness of which his earlier Kantian works had already given us an excellent sample.[3] The

[1] R. MONDOLFO, *La Filosofia antica*, Bologna, Cappelli, 1928.
[2] E. P. LAMANNA, *Manuale di storia della filosofia. P. I, La filosofia antica; P. II, La filosofia del Cristianesimo*, Le Monnier, 1927–8.
[3] See E. P. LAMANNA, *Kant* (Ediz. Athena, Milano).

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difficulty of composing an elementary history of philosophy may be justly appreciated only by one who has made trial of it for himself, and who knows therefore the difficulty of avoiding the two opposite risks—either of a too doctrinaire and complex treatise, or of an arid exposition of names and philosophical dogmas. In my opinion Lamanna has steered very successfully between the two reefs with a genetic exposition which, while limited to a few essential aspects of the various doctrines, endeavours, nevertheless, to give an adequate account of what sort of problem and what spiritual interests they were intended to satisfy. It is easy, for example, to recount that Aristotle distinguishes a passive from an active intellect, but it is far from easy to explain to the general reader why Aristotle has been led to make that distinction, that is, to reconstruct the Aristotelian point of view and all that depends on it. The extensive research that is now being made in Italy in this field of the history of philosophy, which was formerly neglected or limited to narrow expositions in monographs, helps to free philosophical studies from a too restricted specialization, hence to harmonize the problems of pure speculation with those of general culture, literary, historical, and scientific.

GUIDO DE RUGGIERO.

(*Translated from the Italian by* CONSTANCE ALLEN.)

PHILOSOPHY IN RUSSIA

IN April a conference of the Marxist-Lenin Scientific Institutes was held in Moscow; reports of it, published in the official Soviet newspaper *Pravda*, show that the ban on philosophy has not been removed. The only kind of philosophy approved of by the Bolshevik Government is 'dialectic materialism,' and it is the business of all adherents of the true doctrine to present "a united front against the common enemy—idealism." A. Deborin's paper, read at the Conference, draws a gloomy picture of "idealism being still strong in the field of psychology, while æsthetics is almost entirely dominated by it"; and although Deborin insists that the utter worthlessness of idealism has been proved by Marx and Lenin once and for all, yet many of the weaker brethren are caught in its meshes, and Marxist philosophers must wage an unceasing war upon it. What exactly is meant by 'idealism' in this connection is not specified, but apparently the term covers all theories that have a 'bourgeois' flavour about them. Not only the philosophers, but even the scientists of Western Europe are accused of "drifting, for political and class reasons, towards flagrant idealism." Comrade O. T. Schmidt, in his paper, complains that "in the West religion is openly preached in scientific journals. Every difficulty in explaining natural phenomena is welcomed by scientists, since it allows them to free the spirit from the thraldom of physical laws, and in their anxiety to secure this freedom for man they go so far as actually to acknowledge the Deity." "Materialism and revolution are closely interconnected, hence social classes that are afraid of the revolution turn away from materialism"—and consequently the task before the Soviet philosophers is to carry the propaganda of materialism into the enemy's camp, so as to further the world-revolution.

It is hard to believe that these extraordinary statements should have been made in good earnest at what purports to be a conference of learned men. Had the reports been published in some *émigré* newspaper, one might suspect they were caricatured; but the unimpeachably Bolshevist *Pravda* leaves no room for doubt.

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It is gratifying that in spite of the Communists' determination to stamp out free thought, the spirit of philosophical inquiry is still alive in Russia. In the last Survey mention was made of Losev's works; from Deborin's paper at the Conference we learn that Losev has brought out two more books—a fact greatly bewailed by 'true Marxists.' Also it appears that in 1926 a symposium was published in Moscow under the title *The Ways of Realism*, containing articles by B. Babynin, F. Berezhkov, A. Ognyov, and P. Popov. The authors describe their theory as 'Intuitive Realism'; it is essentially the same as Lossky's Intuitivism and closely resembles the conception of knowledge worked out in this country by Professors Alexander, Dawes Hicks, Laird, and others. Babynin argues that "the subject can come to know itself only in contradistinction to an object independent of it." Berezhkov shows that the discoveries of physics with regard to sound, colour, etc., do not disprove the trans-subjectivity of sensible qualities. Ognyov analyses such facts as, *e.g.*, our discrimination of the size of an object at a distance, and, while admitting that "perception is a process of dynamic interaction between the object and the psycho-physical subject of knowledge," points out that the content perceived need not be a mental state of the subject. Popov, in one of his articles, argues that the categories are objectively real, and in the other inquires into the function of judgment in knowledge. He distinguishes three stages in judgment: (1) potential synthesis, *i.e.* the apprehension of an object as an undifferentiated whole; (2) analysis; (3) actual synthesis. Following Hegel, for whom judgment is a 'self-development of the originally given,' Popov contends that in 'actual synthesis' reason expresses in a completed form the laws and correlations potentially contained in the original data.

The symposium would have been more interesting were its authors familiar with modern philosophical literature on the subject, but in a sense the fact of their having come to their conclusions unaided makes their work more significant.

As regards Russian philosophical literature abroad, an extremely valuable book on Jacob Boehme by Alexandre Koyré has just been published in Paris (*La philosophie de Jacob Boehme*, pp. 524 + xvii, Librairie philosophique. Vrin, 1929). Those who have attempted to acquire a first-hand knowledge of Boehme's philosophy know how extremely difficult it is to follow the abstruse thought of the great German mystic, expressed in obscure and ambiguous language. Mr. Koyré does a great deal to lighten the student's task, and there is no doubt that his monograph will become indispensable to all who are interested in Boehme. The reader is greatly helped by the fact that Koyré carefully explains the meaning of various terms which Boehme uses in common with other writers of the period, while ascribing to them a significance of his own; Koyré also indicates the difference between the early form of Boehme's philosophy as worked out in the *Aurora* and the form which it assumed finally. Unravelling the several trends of thought unsolved in Boehme's writings, he presents it as a system according to which God and the world are interpenetrated with contradictory principles: *In Ja und Nein bestehen alle Dinge*; the essential condition of life is an intense struggle between the 'dark' principle of insatiable desire and the principle of light, love, and reason. This duality is inherent in the nature of God Himself. The difficulties involved in Boehme's conception of the self-origination of God are brought to light through a detailed analysis of the subject, in the course of which the author points out that by the *Ungrund*—the starting-point of God's self-origination—Boehme means the same thing as the "Divine Nothing" of negative theology. This *Ungrund*, or indeterminate Absolute, is not the highest principle, but merely one of the

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conditions that give rise to the self-origination of the concrete Personal God. As Baader has pointed out, "Boehme seeks not the *ens nullo nodo determinatum*, but *ens determinatum omni modo*." According to Koyré, Boehme's philosophy is not pantheism, for although there is a distinctly pantheistic strain in it, Boehme constantly and emphatically asserts that God is not the world; God is present in the world, everywhere and nowhere, as the soul in the body. Creation of the world is not a one-sided act of the Divine Will bringing forth the world out of nothing, but an act of co-operation between God and the creatures that have their source in the Divine nature, and are free to determine their own character and destiny.

In the course of his exposition Koyré points out the influence that Boehme has had on other philosophers—on St. Martin, Baader, Fichte, Schelling, Hegel, Solovyov, and subsequent Russian thinkers; the doctrine of Sophia, and of the *Natur-Sprache*, plays an important part in Russian philosophy. It is interesting to find an echo of Boehme's conception of language as an expression of the essence of things in Losev's *Philosophy of Name*, and in Father Sergey Bulgakov's unpublished book on the same subject, some chapters of which will appear shortly in a German magazine, *Der Russische Gedanke*.

A recently published book by Father Sergey Bulgakov, *Jacob's Ladder: Concerning Angels* (Paris, 1929), also deserves mention. It is primarily theological, and sets forth the teaching of the Church and the author's own reflections about angels, but it has a certain philosophical interest as well in so far as it contains a metaphysical doctrine of the intimate interconnection between the celestial and the material world. The author maintains that in the cosmic whole angels play the part which Plato assigned to Ideas. "Ideas exist not as logical abstractions or schemata of things, but as personal essences, as Angels of the Logos." No arguments are adduced to prove this assertion, perhaps because it has already been defended with great depth and originality by P. Florensky in his book *The Meaning of Idealism* (published in Russia in 1915), and is frequently met with in the teaching of various schools of mysticism. The chief value of Father S. Bulgakov's book is not in his reasoning, but in the remarkable way he makes the reader feel the presence of spiritual realities in the world of space and time.

A new philosophical magazine has just been founded in Germany, *Der Russische Gedanke, Internationale Zeitschrift für russische Philosophie, Literatur Wissenschaft und Kultur*, edited by B. Yakovenko. Its purpose is to provide Russian thinkers with an opportunity of expressing their views, to investigate the problems and the history of Russian thought and culture, to comment upon new developments in it, and to review appropriate books. The first number contains articles by Lossky (*Die intellectuelle Anschauung als methode der Philosophie*), Berdyaev (*Le problème métaphysique de la liberté*), Yakovenko (*Die Grundvorurteile des menschlichen Denkens*), Frank (*Ich und Wir*), and others, and some interesting reviews.

Another German magazine that will be to a large extent concerned with Russian thought is *Orient und Occident*, edited by Berdyaev, Frietz Lieb, and Paul Schütz. The first number—*Russlandheft*—has several articles by Russian writers, and is devoted to the discussion of the meaning and the relations of Orthodoxy and Protestantism.

One cannot tell, of course, whether these two magazines will be able to pay their way, but the very fact of their being launched shows that there exist in Western Europe a considerable interest in Russian philosophical thought.

NATALIE DUDDINGTON.

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NEW BOOKS

Experience and Nature. By JOHN DEWEY. (London: George Allen and Unwin Ltd. (Second Edition.) 1929. Pp. ix, 4a, 443. Price 12s. 6d.)

This book is one of the most important expressions of the philosophical view known as naturalism. It is now in its second edition, and Professor Dewey has written a new preface and completely rewritten the first chapter, with the object of making his standpoint more clear.

What he objects to (35) is the use of philosophical analysis to discredit and not to illumine the "things of gross experience"—to "make dubious and even incredible the reality of the affections, purposes, and enjoyments of concrete experience."

He insists (38) that "common experience is capable of developing from within itself methods which will secure direction for itself and will create inherent standards of judgment and value." That "life can be a fountain of cheer and happiness." He desires to promote "a respect for concrete human experience and its potentialities."

Philosophy can, he insists, aid in this. For primary experience is too complex to be controlled without the help of reflection and analysis. But unless the analysis is conditioned and guided by the purpose of lighting up our everyday experience, it becomes harmful. Every reflective analysis is based on a selection of aspects; it is thus tentative and experimental. Its justification depends on the amount of light it can throw on the concrete experience. Whether it can throw any light on this experience or not depends on whether it can give instructions to others as to what steps to take in approaching concrete experience, and whether it can predict what will be seen in concrete experience when these steps have been taken. Such is the method of experimental science; and that is why Professor Dewey describes his point of view as empirical.

He insists that every philosophic system, starting as it does with a particular selection from experience, reflecting as it does on the results of this selection, can be utilized, if we know how, to throw light on common experience. But only when the tentativeness and particularity of its selection is avowed, and when it is controlled by being brought back into relation to common experience. In other words, when it is used as a stick and not as a crutch. Most philosophies he regards as consolatory, rather than as incitements to a fuller life.

This then is an expression of his empiricism. But an empirical attitude of this sort presupposes that we can take what we experience as what there is to be experienced, and that we need not be put off by any difficulties such as are raised by the problem of how we can know anything with certainty. There is a valid distinction between subjective experiencing and that which is experienced; and to make this distinction enormously increases our power over nature; but if the distinction is widened to a cleft, the situation becomes one in which a mind on the one side is thought to confront an object on the other. Experienced-object is then interposed as a third thing, and it becomes easy to see how experienced-object can be related to mind, but difficult to see how experienced-object can be anything but subjective, and difficult to see how objects in the original sense could be experienced at all. Arising

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within "primary experience," as Professor Dewey calls it, and kept strictly subordinate thereto, the distinction between what is experienced and how it is experienced is of great value; but when used to discredit primary experience, it refutes itself. What we experience is "nature": nature experienced to be what we experience it to be when we come to it with all the reflection and analysis of which we are capable; a nature which includes ourselves, with all our reflectings and analysings, all our affections, strivings, and ideals.

Professor Dewey is an empiricist, not in the sense of accepting only sense-impressions and regarding reason as a mere instrument for co-ordinating sense-impressions, but rather in the sense of striving always to preserve a due sense of balance, of wishing not to overstress any elements in experience to the detriment of experience as a whole. His philosophy is naturalistic, not in the sense of regarding man as a mere product of purely mechanical forces over which he has no control, but rather in the sense of refusing to make a cleavage between man's mind and nature, of resolutely taking man in his total environment. To describe him as an instrumentalist is misleading unless we understand clearly what he means by this term. Perhaps his chief criticism of philosophers in the past is that they have "failed to note the empirical needs that generate their problems, and have failed to return the refined products back to the context of actual experience, there to receive their check, inherit their full content of meaning, and give illumination and guidance in the immediate perplexities which originally occasioned reflexion" (33). This is to insist that analysis and reflection are not ends in themselves, but that they must always be employed to throw light on experience as a whole. But to say that they are "mere instruments" for the active manipulation of experience, and then to describe the philosophy that insists on this as "instrumentalism," is to suppose that a hard and fast distinction exists between analysis and reflection on the one hand and experience on the other. And that is a complete misunderstanding of Professor Dewey's standpoint. His chapters on "Experience, Nature, and Art" and on "Existence and Value" should serve to remove any misconceptions on this matter.

His stress on "gross, primary experience," on "crude, everyday experience," on "experienced material," which is "the same for the scientific man and the man in the street," on "gross, macroscopic, crude subject-matters in primary experience," as contrasted with the "refined, derived objects of reflection," which are described as a "secondary and refined system"—all this, as it appears in the first chapter, is easy to misunderstand. For it suggests that somehow the "gross," "crude," primary experience of the ordinary uneducated man is the arbiter of the truth or falsity of scientific and philosophic reflections. It suggests that after reflection has done its work, crude experience remains unaltered. It even suggests the attitude of good-natured contemptuous superiority the half-educated practical man often has toward the scientist and the philosopher. But of course Professor Dewey does not mean this, and his book as a whole supplies the proper antidote. He does distinguish and does mean to distinguish between "what is experienced as the result of a minimum of incidental reflection and what is experienced in consequence of continued and regulated reflective inquiry" (4). And though he insists on the latter being referred back to the former "for test," he insists that when this is done, the former receives a new meaning and significance.

Here, however, is the point at which difficulty of interpretation arises. What is this "primary experience" to which the products of reflection must be referred? It is admitted that reflective inquiry adds something to primary experience; just what does it leave unchanged? The question arises with special force when we go beyond the bare, coloured, hard, odorous, etc.,

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qualities of objects, to the affections, tastes, desires, strivings that as I understand it are also to be found in primary experience. Is my philosophy to be tested by being "brought back" to the actual desires, tastes, and strivings of "common humanity" at its crudest and rawest and most primary? Where are we to look for primary experience? In Whitechapel or Golder's Green or Park Lane? Personally I should draw only one distinction—that between the educated and the uneducated person in a particular field, defining education just in terms of the critical and reflective processes of which Professor Dewey speaks; and I think in the end that he would agree. I should not be willing to refer the products of any scientific or philosophic (or æsthetic) processes of reflection to the test of the experience of the persons who had never gone through any of these processes; just because of the way in which, I believe, these processes change our primary experience. Much of our "primary experience" they do (rightly it seems to me) discredit. Reflection and analysis, for example, suggest that "primary" experience of music is vastly different from "educated" experience, and much less trustworthy. The musically educated person "hears" differently. It is the same with ideals of life, with affections and desires. I am willing to criticize a philosopher on the ground that he does not really succeed in living his own philosophy, *i.e.* in incorporating it into his experience as a whole; or on the ground that I do not succeed in incorporating it into my experience as a whole when I undergo the necessary discipline. I am not willing to criticize him on the ground that his philosophy does not square with somebody's "primary" experience. Nor do I think it is true that when a scientific theory is tested, it is tested by being "brought back to primary experience." The testing of Einstein's predictions about the deflection of light by the presence of the sun (4) depended on the examination of photographs taken under conditions that no scientifically uneducated man could appreciate, and by methods no uneducated man could follow. The scientist's theories are tested by the scientist's experience, not by any "primary" experience. Even Galileo with his telescope would not have been able to test Einstein's theory.

Personally I am inclined to think that "primary experience" is a myth. I do not think in any case that it is able to serve the purpose for which Professor Dewey wants it. The difficulty is to find a satisfactory term. I have already described empiricism as the endeavour to keep a "due sense of balance," as a desire "not to overstress any elements in experience to the detriment of experience as a whole." I used these phrases in preference to speaking of referring theories back to primary experience; but it is clear that they are not sufficient to explain what is meant by empiricism. Yet to refer to primary experience does not afford the enlightenment it seems to promise.

And again, it seems that Professor Dewey's criticisms of philosophers as not referring their theories back to primary experience, and even as discrediting primary experience, are not, in the end, justified. David Hume insisted that he did not in ordinary life pay attention to the sceptical doubts that reason roused in him when he was philosophizing; but this is so far from being typical of the ordinary philosophical situation that it is rather an expression of part of Hume's philosophical attitude to reason. The ordinary philosopher really does believe that he experiences things as his philosophy tries to describe them; it is not only his philosophy, but his experience, that discredits "primary experience." Why should he be dragged back to a primary experience his own experience has already turned aside from?

I do not indeed think that there is any vital difference between Professor Dewey's method and that of the philosophers he criticizes. Both he and

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they transform experience as a result of reflection and analysis; the differences between them are a matter of the kind of transformation effected, due to the different ways in which aspects or elements of experience are stressed. But these differences fall within the common field of reflective analysis. Neither they nor he would be content with an experience which fell asunder into a part which is "lived" and a part which is merely "thought." Did Spinoza, did Leibniz, did Bradley "live" as though their philosophy were a thing only of the study? Were not their philosophies through and through "empirical" in Professor Dewey's sense?

I have dealt with these preliminaries at some length, because they seem to me to present stumbling-blocks to the approach to Professor Dewey's view of life, which is of great importance. He has been sometimes criticized for holding up the ideal of "getting busy" without giving any indication as to what we are to get busy for, to what end we are to work. This criticism is based on the fact that he refuses to anchor himself to any "eternal" values, to any "absolute." There is in this matter a wide difference between philosophers—how wide in the end I am not sure. It may from Professor Dewey's point of view be compared to the difference between a person lying down on the ground and a person standing up. To lie down is to have a fixed support. To stand up is to have a support, but to be compelled to make continual adjustments to preserve one's balance. The skater or the swimmer illustrates the situation even better; the equilibrium is here immanent in the activity. And Professor Dewey's statement already quoted, that "common experience is capable of developing from within itself methods which will secure direction for itself and will create inherent standards of judgment and value," expresses his fundamental aim. It is not that he wants us all to go skating round aimlessly. It is that he feels that life, properly lived, is capable of being self-directing. It is not the aim of his philosophy to provide a universal direction for life; it is to put us in the way of the self-directing life.

This book is an admirable expression of the attempt to bring back the distinctions that continually tend to be made hard and fast—*e.g.* between experience and nature, mind and matter, facts and ideals, practice and theory, change and permanence, time and eternity—to the fluid matrix of experience from which they arose, and to make them afresh, quickened and vivified. He is doing in his own way what (to take only one instance) Nettleship did so well in his. The task is one which each generation has to undertake afresh. Whoever will consider attentively Professor Dewey's restatements of the fundamental problems of philosophy will find his thought enriched and fructified. The book is not a solution, but a rebirth, of problems. Professor Dewey's preference for anthropology over psychology in his search for material illustrates the nature and breadth of his approach. Every discussion shows with how wide a knowledge of past philosophical thought he comes to the problems of the present. I know no book of recent years which so consistently preserves a sense of reality, so steadily points toward the future of philosophic thought.

L. J. RUSSELL.

The Sciences and Philosophy. Gifford Lectures, University of Glasgow, 1927 and 1928. By J. S. HALDANE, C.H., M.D., F.R.S. (London: Hodder and Stoughton, Ltd. 1929. Pp. ix + 344. Price 15s. net.)

Professor Haldane is a biologist whose work has lain mainly in the field of extraordinarily delicate quantitative physical and chemical analysis. If

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anyone is to prove that the organism is merely a complicated physical structure, he must do it in just this field; but Professor Haldane is convinced that the crucial evidence all tends to sharpen the contrast between an organism and a merely physical structure. That is an old story with which he has already made us familiar; it is the centre from which he proceeds in this book to a wider account of the sciences in their relations to each other and to reality as a whole.

Consider a purely physical happening, such as a gas contained in a vessel. Here nothing needs to be brought into account save the random movements of isolated particles, colliding with each other and with the walls of the vessel in which they are contained. Out of this chaos the physicist brings order by his calculations. There is no need to suppose that the separate particles are animated by any purpose, solitary or communal, or to regard the changes of the gas as a whole as modified by any controlling activity. The conception of a chaotic or random distribution of positions and motions is sufficient for the description of the physical properties of the gas.

For Professor Haldane such an instance shows clearly the goal toward which the physicist is moving in all fields. Physics is the sphere in which measurement seeks out and bestrides the chaotic; and the fewer the ultimate bonds between entity and entity the physicist has to accept, the more he feels he has penetrated into his subject.

Biology, on the other hand, presents a manifold of elements apparently conspiring together to produce or to maintain certain ordered arrangements. Here the conception of chaos is contradicted at every turn. If in a gas enclosed in a vessel, when we attempted to increase the temperature the walls of the vessel became permeable and allowed a certain number of the particles of the gas to escape, or when we endeavoured to lower the temperature some of the particles of the gas dissociated so as to increase the number of particles in the vessel, these reactions in both cases having the effect of maintaining the temperature constant in spite of our interference, and if, when we ceased interfering, certain supplementary processes were set up with the effect of regaining the original number and arrangement of particles, we should then have to admit that there was something which our original theory of chaos could not account for, and should have to regard the gas with its vessel as a single entity, self-maintaining in certain respects. And since, in the case of organisms, we find something like this characteristic of every reaction, when it is investigated with sufficient detail, Professor Haldane concludes that biology as a science must adopt a basic conception entirely different from that of physics: the conception namely of co-ordination, resulting in a stability which is specific to the organism.

To the question, how the organism succeeds in maintaining itself in this way, there are two usual answers that Professor Haldane regards as conflicting with either the results or the canons of scientific investigation. The first is that there is some hidden and complicated mechanism. The second is that there is some vital principle or entity controlling what would otherwise be purely mechanical processes. The first answer is rendered more unlikely the more carefully the investigations are made. The second answer has recourse to the unknowable. The only scientific attitude, for the author, is to stick to the observed facts. "In biological observation . . . it is visible and tangible organized structure and activity that we are dealing with, and our interpretations must be in terms of that structure and activity" (84). What we mean by life, then, is a "visible and tangible" organized structure. The author cannot conceive how a set of entities which in one spatio-temporal arrangement move chaotically can, in a more complicated arrangement,

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show the co-ordination we describe as living; nor can he conceive how a new entity, life, can supervene on a purely chaotic set of entities, so as to co-ordinate and arrange them differently. The only alternative left for him is to suppose that co-ordination belongs to the very nature of the elements in the organism, and to conclude that what belongs to them in the organism also belongs to them elsewhere.

But this involves the further consequence, that the chaos from which the physicist starts is not really there at all.

This, of course, is a situation of old standing. Whether you are working as a physicist or as a biologist, you are dealing with the same materials; and if you regard materials as having basic properties, you must regard them as having the same basic properties wherever you find them. You cannot play fast and loose with these properties; nor will it help you to clear thinking in the end to suppose that somehow new "qualities" "emerge" in new situations. Or so Professor Haldane considers. For my part, I think he does not do justice to the fundamental point of the "emergent" view, which is that, apart from some particular mode of organization, it is impossible to speak of properties at all. "Emergence" really rests on a denial of the conception of "basic property," though I do not myself like either the term emergent or the term evolution as a means of expressing the interrelations between the properties in various organizations. If, however, you are to accept the conception of "basic property" as Professor Haldane seems to do, then either you must reduce your biology to physics, or you must regard your physics as taking into account less than is really present. It is this latter alternative that the author adopts. He speaks of physics as abstract, as giving "only appearance," as based on "a provisional working hypothesis," as resting on things "seen only partially" (193), as holding good "only in superficial appearance" (203); and of biology as "at any rate something nearer to reality itself" (193).

It is true that this for him requires "an act of faith" (204): for we cannot trace all the details of the co-ordination within the biological organism, and we are continually meeting there phenomena that seem to present only the purely physical aspects (179–80). Indeed, in a previous passage he suggests that "apart from the existence of the chaos of physico-chemical conditions, we cannot imagine the existence of active biological co-ordination" (161). The concept of co-ordination manifests itself "only in the general regulation of mechanical processes" (160). Thus biology has recourse to and at the same time gives the lie to physics.

The biological point of view, however, is not itself final. The co-ordination treated by the biologist is not one which involves either anticipation or retrospection; it is describable in terms of space without reference to time (178). I take it that what this means is that, for example, in the biological account of the tensed muscles of the tiger preparing for a spring there is no need to refer to the anticipated spring. But for a complete account, the tensing would have to be taken as "the fulfilment of the past and the promise of the future" (177). The science which takes this wider view is psychology, which deals with "conscious behaviour." Here, as in the case of biology, Professor Haldane does not wish to introduce any mysterious entity "consciousness": he wishes to restrict himself to what is to be found in "actual visible and tangible behaviour," "what we can see and feel" (106); and his general conclusion is that "in conscious activity we have the manifestation of organic unity, not merely as regards space-relations, but also, and as an essential feature, as regards time-relations, so that the manifestation is progressive" (99). This point of view is worked out in Chapters VI to IX.

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These chapters are full of interest, though we have no space to discuss them here. But his account of consciousness involves a widening of the science of psychology, so as to make it include all conscious behaviour as such. In his account of it it is very wide indeed. "It covers, in fact, all that is included in what are often called the humanistic sciences, which deal with the various manifestations of conscious activity, as we meet them, not merely in individual, but also in social life" (147).

Now just as the facts of biology involved reference to and yet gave the lie to purely physical facts, so the facts of psychology involve reference to and yet give the lie to purely biological facts. We have here, according to the author, a situation which is inevitable so long as we remain at the purely scientific point of view: observation indicates that some facts are purely physical, some biological, some psychological, while argument suggests that if any are psychological all must be. Philosophy here comes in to justify argument and to explain the facts. For on the one side philosophy shows (on lines foreshadowed by Kant) that our whole world is an experienced world, the "domain of psychological activity," space and time being themselves products of this activity; and on the other side philosophy explains how the various aspects of the experienced world can be treated for practical purposes with various degrees of abstraction, and thus vindicates the usefulness of physics and biology without being compelled to admit their truth.

The psychological point of view (in the sense defined) is thus justified as the point of view closest to reality; and this thesis the author explains and amplifies in Part II, showing how the world must be regarded as the unity of a single spiritual personality, within which finite persons are somehow appearances, and developing the consequences for religion of this view. With all this I have no space to deal. The author desires to purify religion of the materialistic basis which has often caused it to appeal to something supernatural, and he argues that the spiritual unity of experience is inconsistent with the immortality of finite persons.

The book is short and easy to read. Professor Haldane writes with sincerity and restraint; the scientific caution with which he has worked in his investigations for so long here finds admirable expression.

L. J. RUSSELL.

Hegel's Science of Logic. Translated by W. H. JOHNSTON, B.A., and L. G. STRUTHERS, M.A. With an Introductory Preface by VISCOUNT HALDANE OF CLOAN, K.T., P.C., O.M., F.R.S. (London: George Allen and Unwin Ltd. 1929. Vol. I, pp. 404; Vol. II, pp. 486. Price 32s. 2 vols.)

Hegel's Logic of World and Idea. Being a translation of the second and third parts of the Subjective Logic; with an Introduction on Idealism, Limited and Absolute. By HENRY S. MACRAN, Fellow of Trinity College and Professor of Moral Philosophy in the University of Dublin. (Oxford: at the Clarendon Press, 1929. Pp. 215. Price 12s. 6d.)

These two books constitute an important additon to the now somewhat extensive literature in English bearing upon the philosophy of Hegel. The larger of the two, edited by the late Viscount Haldane, is a complete translation of what is commonly referred to as the "larger Logic." Hitherto, only

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the shorter version, forming part of the *Encyclopädie*, has been accessible to English readers, having been translated by William Wallace. The other new book, edited by Professor Macran, is also a translation of a part of the larger Logic, *viz.* the concluding chapters of the Logic—those relating to the "Subjective Logic." Both translations, so far as I have tested them, appear to be thoroughly well down. The part that is edited by Professor Macran is perhaps rendered into somewhat more fluent English than the corresponding part in the other translation. Both contain Introductions.

Lord Haldane's Introduction has a special interest, as being one of his latest utterances. It can hardly be said that he makes excessive claims on behalf of Hegel. He admits, as others have done, that much of his work will have to be done over again. He admits also certain defects in Hegel's personality. "He was a hard, dry man," he says. "He had, notwithstanding what has been said by people who have not mastered his system, nothing of the mystic in his composition. He exercised at Berlin, where he was professor for many years, more influence with the Prussian ministry than was desirable in one who had better have held himself aloof from these things. In short, though worshipped as a teacher, he was far from being universally liked as a man." Perhaps there is some exaggeration in this; but it is certainly well to remember that he was very far from being an amiable dreamer. What Haldane wished to emphasize is that the abiding element in Hegel's work is the rigour of his method rather than the particular conclusions to which he was led. "We need not be deterred," he says, "by the feeling that we are no longer interested in the doctrine of the Absolute which engrossed attention in the early part of last century; nor by Hegel's political tendencies, whatever they were, and they were diverse; nor by the insufficiency of the scientific teaching, which was that of his time." He urges that it is not in any of these things that the abiding value of Hegel's work lies, but rather in his vigorous examination of fundamental concepts. I think it is, on the whole, true to say that this has been generally recognized by the ablest of his expositors in this country. They have not been anxious to follow him in the particular applications that he was led to make, but rather to appreciate the value of his method. For this purpose the Logic has to be regarded as the most important part of his work. Hence it is very desirable that it should be made accessible to English readers in its most complete form; and this is what has now been done in the two volumes that were edited by Haldane. Let us be duly grateful.

Professor Macran's more limited version deals only with part of the subject, but certainly with one of the most difficult and important parts. His translation is accompanied by an interesting prefatory Essay on the general significance of Absolute Idealism. His use of the term "Idealism" is perhaps somewhat misleading. He is not mainly concerned with the advocacy of "Idealism," in the sense in which it is opposed to "Realism," but rather in the sense in which the thorough analysis of fundamental concepts is opposed to one-sided emphasis on particular aspects of experience. It is thoroughness in thought that is emphasized, rather than the special nature of the results. I certainly think it is true that thoroughness is the great "secret of Hegel," and it is chiefly in the Logic that this secret is most fully disclosed.

J. S. MACKENZIE.

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An Anthology of Recent Philosophy. Selections for Beginners from the Writings of the Greatest Twentieth Century Philosophers. With Biographical Sketches, Analyses and Questions for Discussion. Compiled by DANIEL SOMMER ROBINSON, Ph.D., Professor of Philosophy, Miami University. (Thomas Y. Crowell Company, New York. Pp. vi. + 674, 1929. Price $4.00.)

This book is described on the dust-cover as "a cross-section of the most readable of recent Philosophical Literature," and contains extracts from the works of no less than sixty-four living or recently deceased philosophers. There are sixty-eight extracts in all, varying in length from four to fifteen pages each. Each extract has a pretty full synopsis prefixed, and a list of seven or eight questions appended. At the end of the book there are some fifteen pages of "Who's Who" and an index.

The book is divided into five parts: 1. Orientation; 2. Idealism; 3. Realism; 4. Pragmatism; 5. Other Types of Philosophy. Part 1 is on the whole admirably arranged, and leads the reader by easy stages from the popular to the technical. Chapter iv, which contains a long extract by Dr. Broad on Critical and Speculative Philosophy and a shorter one by Professor W. P. Montague on the Main Divisions of Philosophy, is particularly good, though it is a shock to the reader to find that these distinguished authors occur nowhere else in the book.

The next three parts, on Idealism, Realism, and Pragmatism, form the main bulk of the book. All three have the same structure. Each begins with a general sketch of a more or less historical sort. Next there is a chapter on what the Editor calls "The Problem of" Knowledge and Existence, followed by chapters on Truth and Error, Mind and Body, and a final one on Value. Each chapter contains from two to four extracts from different philosophers. This ingenious parallelistic arrangement is one of the most striking features of the book, and probably it is one of the best that could be adopted. Certainly it will be a great help—perhaps too great—to the bewildered student (whether undergraduate or layman) who is anxious to "get up" a subject, and doesn't quite know where to begin. Still, it results in a certain amount of artificiality. It is not easy to see what is meant by a "realist" view of the relation between mind and body. On the face of it a realist might be a parallelist, or an interactionist, or an epiphenomenalist, without prejudice to his realism. No doubt an idealist must hold that all matter, and therefore the human body, is in some sense dependent for its existence upon the knowledge of it. But this does not commit him to any special view concerning the relation between volition and muscular movement, or emotion and the ductless glands. If he draws a distinction between the finite mind and the Infinite Mind, he may even be an epiphenomenalist. And some forms, at any rate of parallelism, as well as the interaction theory, seem to be open to the pragmatist. With regard to Value, the situation is still more confusing. Doubtless we may distinguish between subjectivist and objectivist views. But paradoxically enough, it is the idealists who hold the objectivist views, while some of the realists (*e.g.* Professor Perry) are subjectivists; while in pragmatism, values are, so to speak, more objective than anything else.

It may, of course, be said that these two issues are secondary, and that in the philosophy of this century (to which our editor confines himself) the theory of knowledge has been the main topic, so that the division of philosophers into Idealists, Realists, Pragmatists, and Others, is, after all, the best that can be made. And it must be admitted at once that most of the philosophical movements of the past twenty-five years *originated* as revolts against Idealism. But since then they have gone on to more constructive tasks. As Dr. Bosanquet

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has shown us, the extremes have met at more than one point, and new lines of division have appeared. For instance, is Professor Whitehead's *Science and the Modern World* an idealistic or a realistic work? In what sense can the later books of Mr. Russell be called realistic, or the later books of Dr. Bosanquet idealistic? Where does Professor Kemp Smith stand? He calls himself an idealist, and in this book he is put among the idealists; but his theory of knowledge is plainly realistic. Even Professor Alexander's *Space, Time, and Deity* belongs in some ways to the great tradition of speculative Idealism, and he himself has laid stress on his affinity with Spinoza. Still another sign of the times is the revival of interest in scholastic philosophy, particularly in St. Thomas. The truth is that the difference between idealists and realists is now largely one of interest; realists are interested in Logic and in the philosophy of Nature, idealists in the philosophy of Man. Nor is the line between pragmatists and idealists at all an easy one to draw. The most "out and out" idealist of modern times, Signor Croce, appears to hold that in mathematics and natural science "true" means the same as "useful." And on the other side the pragmatists, to judge from this book, seem disposed to accept that form of idealism which the Germans call "the Philosophy of Immanence." It may of course be said that in America, the most conservative country in the modern world, the old oppositions have persisted in a more clearly marked form. Yet Professor Montague of Columbia tells us in his interesting book *The Ways of Knowing* (1925) that "the epistemological problem" has now been solved, and that it is high time to go on to Ontology.

We may now say something about the four main divisions in detail. The division on Idealism is on the whole the least satisfactory. It is true that Professor Hoernlé's opening sketch of the meanings of the terms *idea, ideal,* and *Idealism* is one of the best things in the book. But it does seem very extraordinary that a selection of passages occupying 180 pages in all should contain only four pages from Mr. Bradley and only eight and a half from Dr. Bosanquet (not particularly representative ones), and absolutely nothing from Dr. McTaggart. And it is still more odd that the chapter on "Idealistic Solutions of the Problem of Truth and Error" should contain as its only account of error an extract from an American writer, who solves the problem of error by making all erroneous propositions negative! We think that idealists can do better than this; there is Professor Joachim's *Nature of Truth*, for instance. The chapter on "Spiritual Pluralism" is weaker still. The extract from Mr. Hartley B. Alexander, entitled *Apologia pro Fide*, is better fitted for the pulpit than for a learned work; it is vague and declamatory, and it has no obvious connection with Spiritual Pluralism at all. And is it justifiable to include a section about—not by—the late Mr. Borden P. Bowne, a section, too, which merely tells us that he agreed with such and such philosophers and disagreed with others? The chapter on Mind and Body contains a good section by Miss Catkins on "Panpsychism." The other two sections of this chapter seem to us very weak. Something much better could have been found in Dr. Bosanquet's *Gifford Lectures* or Professor A. E. Taylor's *Elements of Metaphysics*. The final chapter on Value is good.

The next main division, on Realism, though more satisfactory, leaves rather a mixed impression. No doubt there are so many more writers to select from that the editor's task was difficult. Still, it is a shock to find that not a single German writer occurs in this part (we should have thought that Professor Husserl and Professor Külpe had very strong claims—to mention no others); that Dr. Broad does not appear at all, though he has something of importance to say on most of the topics selected for discussion; and that Messrs. Moore, Alexander, and Whitehead, who are apt to be considered the leaders of English Realism, are relegated to the chapter on Value. (Even there Professor

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Alexander is given only four pages. And Professor Moore's contribution, which is perhaps the best thing in the whole book, is given the unhappy title of "A *Definition* of Intrinsic Value," whereas it is notorious that Professor Moore's most characteristic tenet in Ethics is that good is *in*definable.) Mr Russell, on the other hand, is represented by two extracts, an excellent historial sketch of Modern Realism and a quasi-behaviouristic account of truth and falsehood. A writer so voluminous, and so doubtfully a realist, might well baffle any anthologist, and we shall not quarrel with this choice. But we should have liked an extract illustrating Mr. Russell's theory of the external world, which is one of his most characteristic and most ingenious adventures. Turning to the American writers, we are surprised to find that the doctrine usually regarded as typical of the "New Realists," that consciousness is a "cross-section of" the world of objects, is scarcely mentioned in those extracts. Little as we may believe this view, we do at least find it exciting. The "Critical Realists," on the other hand, are well represented. They are usually regarded in this country as the most promising school of contemporary American philosophers, and these extracts go some way to confirm that impression.

The division on Pragmatism is not easy to comment on. We are surprised to find that William James does not occur in person at all, though there is an extract from his *Pragmatism* earlier in the book. However, we are told a good deal about him: indeed, the respective contributions of James and Peirce to the pragmatist movement are discussed at perhaps excessive length. In this historical section there are extracts from Dr. Schiller and from Professor Dewey. But the remaining ten writers will probably be entirely unknown to English readers. Perhaps the most interesting extracts are Mr. D. L. Murray's on Truth and Error, and Mr. H. A. Overstreet's, to which the editor gives the picturesque title "Building the Communal Mind." Mr. Overstreet, however, appears to be rather a mystic than a pragmatist.

Part 5, "Other Types of Philosophy," is a grand *omnium gatherum*. There are chapters on Vitalism and Mechanism, on Agnosticism, on Neo-Scholasticism, and on Nietzsche and Spengler. Why these last should be classed as philosophers, or why, if they are, they should be put into one chapter, may well baffle the reader. Nietzsche's own works, I think, lie outside our editor's period. And can it really be thought that "Nietzscheanism" is an important contemporary school of philosophy? Herr Spengler may or may not be an eminent historian; he has certainly no claim to be a philosopher. What are we to think of a writer who not only admits but boasts that his theories are only true for the epoch in which he lives, and yet presumes to determine the necessary structure of all human history (including human thought) by means of those theories?

Professor Robinson says in his preface that he has mainly in view two classes of readers: students in universities, and laymen who wish to know something about philosophy, but are too busy to read the literature. We should, however, hesitate to recommend this book to anyone who has not already got at least a fair grounding in the subject. Beginners, though they would acquire from it a considerable knowledge of the opinions of philosophers, will not acquire much knowledge of philosophy. Indeed, there is something odd in the very idea of a philosophical anthology. For philosophy consists essentially in argument, and one cannot make a complete argument by fitting together bits taken from different arguments. But although a man will not learn much philosophy from this book, it will serve as a good *hors d'œuvre*, and will give him an intelligent general interest in the subject. Moreover, by providing a carefully docketed exhibition of samples, it will help him a good deal in the choice of further and more solid reading.

H. H. PRICE.

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Relativity and the Hegelian Philosophy. By G. F. HEMENS (Published by the Author at 69 Royal Hospital Road, S.W. 3. 1929. Post free, 1s.)

In this pamphlet of fourteen pages Mr. Hemens attempts to draw a detailed parallel between the physical universe as described in the theory of relativity and the universe as described by a catena of philosophers from Descartes to Hegel. Such a scale of treatment naturally makes the argument difficult to follow, and it is possible that some objections would disappear on fuller discussion, but some appear to be fundamental.

He summarizes the theory of relativity as follows: "All the equations of physics are deducible from a single equation which merely expresses the bare identity of an elementary displacement vector at the beginning and end of a small displacement parallel to itself. . . . Space as we know it and time as we know it are in fact elements of a single objectively existing entity called space-time, which is a purely mathematical four-dimensional continuum of a perfectly easily understandable kind, and this continuum really does extend into the past and the future." He then proceeds to discuss the views of Descartes and Berkeley, with the following result: "For Berkeley the external universe is one, for we all live in the same world, but it is given necessarily in the many selves. In Relativity the continuum is one, and is given necessarily in the many co-ordinate systems, each carrying its own set of numbers. Since the continuum of Relativity is the one external universe of Berkeley, it follows that the many of Relativity is the many of Berkeley, so that each self with its content of perception is a co-ordinate system carrying its own set of numbers." This is Mr. Hemens's central argument, and unless it can be established the remainder of his paper has no foundation, so I will confine my criticism to it. If the many of Relativity is the same as the many of Berkeley, they must have the same structure, that is, some one-one relation must hold between them. In other words, it must be possible to identify each self with a co-ordinate system and each co-ordinate system with a self. To each self corresponds a resolution of the continuum into a one-dimensional time-order and a three-dimensional space-order, but such a resolution is not a co-ordinate system. The space-order can obviously be arranged in an infinite number of co-ordinate systems, and so can the time-order, though this is not so generally recognized. On the other hand, there are an infinite number of co-ordinate systems which do not appear to correspond to selves. For consider one of the co-ordinate systems belonging to some observer and apply the Lorentz transformation to it. As long as the velocity involved is less than that of light we obtain a new co-ordinate system belonging to a possible hypothetical observer, so that it may be said in some sense to correspond to a self. But if the velocity is greater than that of light, the resulting system does not belong to any possible observer; regarded as a self it is inconsistent with our experience, completely confusing such categories as causation; by taking a more complicated transformation more glaring inconsistencies still could be exhibited, but the resulting co-ordinate systems are all on the same footing mathematically. Mr. Hemens's attempt to identify Berkeley's description of the universe with the theory of relativity therefore breaks down. It is, however, worth while to consider what would result from such a correspondence as he is seeking. At present, at any rate, it would leave large portions of physics unaccounted for. The theory of relativity has unified many laws of physics that previously appeared disconnected, but not all of them. The classification in chap. xi of Eddington's *Nature of the Physical World* shows that his "identical laws," the only ones with which the theory of relativity deals, are far from covering all our common experiences. The "statistical laws" cannot be dealt with here, but they are of

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great importance, and it does not appear how they can be stated in terms of the properties of the continuum. The "transcendental laws," among which are atomic and quantum phenomena, are still more clearly opposed to Mr. Hemens's theory. To say that a law of physics is an identical law means that it states that different measurements are different ways of counting the same number in the continuum, somewhat as we get the same number ten by counting first six and then four, or first three and then seven. But a law involving atomic phenomena states that there are counts in the continuum which are mathematically possible and physically impossible; a result which clearly cannot be stated in terms of the mathematical properties of counts.

But suppose all these difficulties disposed of; suppose some hitherto undreamed of synthesis of geometry and theory of probability which should identify statistical laws and identical laws and bring in quantum phenomena by Schrödinger's or some such method, would not a fundamental question still remain? Eddington says: "Supposing our identification to be correct," in other words, "What are we counting?" The displacement vector with which we began is simply a relation, and what are its relata? Have they no other relations? Mr. Hemens's theory would reduce all our knowledge and experience to a relation-structure, and a structure of relations of a very special type, ignoring others which appear *prima facie* to have an equally good standing. It would abolish qualities likewise, a result which seems strange when we consider that Hegelianism is generally supposed to deny the reality of relations. But here we are approaching the question of Hegel's philosophy generally, not Mr Hemens's interpretation of it.

H. WALLIS CHAPMAN.

A Sceptical Examination of Contemporary British Philosophy. By ADRIAN COATES, M.A. (London: Brentano's Ltd. 1929. Pp. 256. Price 10s. 6d. net.)

At the close of his Introduction Mr. Coates apologizes for entering his name, as an amateur, in a professional tournament. He need not be dismayed. Philosophers are not sacrosanct just because they are paid for their services, and Mr. Coates, to do him justice, declines to be in awe of his company, unless, perhaps, in the case of Mr. G. E. Moore. "Having decided to make Professor Moore (in company with James Ward and Professor Dawes Hicks) the termination of my journey and sweet resting-place of content after a long pilgrimage of disagreement," he tells us, "I chose for my first attempt of criticism those articles where my task seemed easiest and the issues most certain, and put off for later treatment those to criticize which I felt less confident and assured." All except these three are treated with marked severity (with the possible exception of Mr. Arthur Thomson). Mr. Joad in particular is savaged, and Mr. Taylor roundly trounced.

Speaking broadly, there is little that can be called amateurish either in Mr. Coates's censure or in his praise. I must admit that I hope few professionals would make the stupid blunder of saying that the "assertion of uniform or necessary causation is itself no more than asserting the 'law of identity.'" But some might. There is some unnecessary rashness, again, in Mr. Coates's excursions into the Greek language and into Greek philosophy. And some of his slips appear to be unprofessional. (For example, he says that "by common-sense experience or beliefs, I mean such experience and beliefs as are shared by all human beings with normal senses" (p. 20), when the point, as he admits on p. 244, refers to normal intelligence, not particu-

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larly to the absence of deafness or a sense of smell. To claim even a loose agreement with Reid, as Mr. Coates does in the earlier passage, is simply ridiculous). In the main, however, Mr. Coates, although he is sometimes in a hurry, possesses a style what many professional philosophers might envy, and also has matter to impart. While I cannot, for instance, pretend to understand his doctrine of value, I think that much of it looks distinctly promising.

On the other hand, I cannot help thinking that there *is* something amateurish in the general idea of Mr. Coates's interesting and stimulating book, and also in the position he attempts to set forth in the end. The plan of the book is simply to take ten of the twelve essays in the second series of *Contemporary British Philosophy* (Messrs. Bax and Hoernlé being omitted) and, with the slightest of possible exceptions, to discuss only what is written in these essays, no attention being paid to what the authors say elsewhere in their more elaborate and presumably more representative work. This seems to me to be taking Mr. Muirhead's collection of personal statements altogether too seriously, and to be rather easy work for Mr. Coates. Mr. Coates's conclusion, again, is an attempt to combine an anthropocentric theory (indeed, on p. 242 a frank mentalism in many important respects) with Mr. Moore's defence of common sense. I would suggest humbly that there are several "civilized adults of normal intelligence" who would not assent.

But if readers of this *Journal* want a cocktail, I would commend Mr. Coates's.

JOHN LAIRD.

A Manual of Ethics. By JOHN MACKENZIE, LL.D., LITT.D. (London: W. B. Clive: The University Tutorial Press, Ltd. (6th edition.) 1929. Pp. xii + 426. Price 9s. 6d.)

Dr. Mackenzie's well-known manual appears in its sixth edition with considerable alterations. Much new matter has been added, both in detailed amplification of the text and footnotes, and in the form of complete new sections. Yet, through omission and condensation, the whole has been reduced by eighty-four pages.

The general plan of the book, of course, remains the same, namely an "outline of the most important principles of ethical doctrine, so far as these can be understood without knowledge of metaphysics." Ethics is said to be concerned with "the general nature of human conduct, and the general conditions which determine its rightness and wrongness." After three introductory chapters, Dr. Mackenzie embarks, in Book I, on a discussion of the psychology of conduct, making effective use of the concept of universe of desire. "The real strength of a desire," he says, "does not depend on its own individual liveliness or force, but rather on the force of the universe or system to which it belongs." New sections deal with Suppressed Wishes and The Group Will, and there is an important new note on Pleasure and Desire. (On p. 64 occurs a longish quotation, most of which was already given on p. 56.)

Book II is a careful and fair-minded discussion of ancient and modern theories of the Moral Standard. Dr. Mackenzie adopts the Hegelian standpoint in ethics, but he discovers something valuable in every theory that he discusses. New sections deal with modern views of Hedonism, with Kant's composite theory of the moral end, with Emergent Evolution, Hegelian Influences,

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the Naturalistic Fallacy, the distinction between Good and Moral Good, and with the place of conscience. A useful summary of the theories of the standard takes the form of a new chapter.

Book III discusses the concrete moral life. Three new sections attack the important problem of how far the individual should subordinate his moral judgment to the ethos of his people. Other new sections contrast the Hegelian theory of retributive punishment with the view, largely inspired by psychoanalysis, that all punishment should be "medicinal." Dr. Mackenzie's verdict is that only when evil is done in full knowledge that it is evil should punishment be retributive. The concluding chapter, which has been much altered, deals with ultimate problems in a compass perhaps too brief to be effective.

The merits of this manual, in its earlier editions, are well known. This new version is in many ways an improvement; but some readers may feel that the sections dealing with recent movements of thought are not always full enough. In particular, the account of Suppressed Wishes is perfunctory, and ignores the possibility that the most earnest value-judgments of an individual or a race may be in part determined by irrelevant subconscious influences. Indeed, a more explicit discussion of the epistemology of ethical experience, and a more detailed elucidation of the ambiguities of the concept of self-realization, might enlighten the student more than it would tax him. Nevertheless, all who are interested in ethics must be grateful to Dr. Mackenzie for his carefully revised map of a difficult country.

W. Olaf Stapledon.

Clinical and Experimental Studies in Personality. By Morton Prince, M.D., LL.D. (Cambridge, Massachusetts: Sci-Art Publishers. 1929. Pp. xvi + 559. Price 5 dollars.)

These studies in personality are a selection from Dr. Morton Prince's lectures and writings that have been published in medical and psychological journals during the last forty years. Without doubt most of them are well known to contemporary psychologists, but it is convenient to have them gathered together in book form; and to future students who come to Dr. Prince's work for the first time this volume will be invaluable.

The contents are divided into four sections. Part I deals with Problems of Psychopathology, Part II with Problems of Personality, Part III with Problems of the Co-conscious, and Part IV with Problems of Consciousness. The topics discussed in Parts II and III are those that are most closely associated with Dr. Prince's name. In Part II we find his discussion of the psychogenesis of Multiple Personality, based upon the records of his two most famous cases —Miss Beauchamp and B.C.A. In Part III we have detailed records of the experimental work on which he has founded his theory of the Co-conscious.

It has been said, by an undiscerning critic, that Sally Beauchamp has been so much discussed during the last twenty years that she has earned a well-deserved rest. With the growth of the analytic schools it has become common to regard as old-fashioned both the data acquired, and the interpretations suggested, by the use of hypnotic methods of investigation and therapy. Such an attitude shows lack of understanding of some of the most important problems of psychopathology, and a mistaken notion that these have been solved or made less puzzling by the newer mode of approach. It would seem probable, indeed, that some of the problems raised by the Beauchamp case and the case of B.C.A. will remain unsolved, and will provide ample material for discussion and controversy, for many years to come. Although it may be

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admitted that secondary personalities are often very largely artifacts, this does not in any way diminish the interest of the problems they present, nor does it make any easier an understanding of the peculiarities they display.

In Part III we find a detailed account of much of the experimental work undertaken by Dr. Prince in his investigation of co-consciousness. His earlier experiments to determine co-conscious ideation are here supplemented by his well-known experimental study of visions and by his study of the mechanism of hallucinations.

The problems discussed in these two sections form the background of Dr. Prince's work during the last forty years, and the theory of the co-conscious which he has put forward in interpretation of the observed phenomena has had an important influence on psychological and philosophical thought. The dominating theme of all these papers is the insistence on the actuality of a region of the mind in which there are thoughts and feelings and strivings that are not open to introspection, and a demonstration of the part played by such subconscious mental activity in the production and maintenance of neurotic disorders. His main thesis, expressed in these general terms, has been widely accepted by psychologists, especially by those whose work lies in the investigation of abnormal mental states; but there is a good deal of difference of opinion about the true nature of the events that take place beneath the threshold of the waking consciousness. Sometimes they are denied all mental status whatsoever and are regarded as being purely physiological. This is a view which Dr. Prince has persistently combated when it has been put forward in explanation of those phenomena, so well described in his writings, to which he has given the name of co-consciousness. Nevertheless, he would seem to be unduly impressed by the arguments put forward in support of "unconscious cerebration," and he devotes what may seem to many to be an unnecessary amount of space to their refutation. So far as co-conscious phenomena are in question the inadequacy of any merely physiological interpretation is obvious to anyone who has had personal experience of them. That they have physiological correlates is not questioned, but that they themselves are psychical (conscious?) phenomena cannot be denied if we "apply the reasoning which makes us believe that other people think as well as ourselves."

It is, however, just on this question of the 'conscious' nature of these mental activities that doubts of Dr. Prince's views may arise. By his choice of the term co-conscious he would seem to imply that co-conscious mental events are essentially similar to the conscious events that we know by introspection; that a co-conscious thought or feeling is, like a conscious thought or feeling, the thought or feeling of an experiencing subject. Yet he takes pains to make it clear that in his opinion a co-conscious thought need not be owned by any thinker, that it may exist in the void, without being owned and without being the experience of any subject. He maintains that it is a naïve notion to suppose that consciousness necessitates awareness by a subject.

It is hard to understand what Dr. Prince means by 'consciousness' when there is no 'awareness.' By awareness he means that the personal (waking) self is aware of its conscious states; and when he speaks of conscious states of which there is no awareness by any self, he is assuming that if and when a brain event has any psychical concomitant whatsoever the mental event is necessarily a 'conscious' one. He cannot accept the possibility of an *unconscious* mental event. He "cannot even think of a 'mental disposition' . . . that is not, at the moment, a state of consciousness." But if it is hard to understand how there can be a mental event that is not a conscious event, it seems even harder to grasp the nature of a conscious event of which there is no awareness by a self.

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Dr. Prince seems to hold that every psychical correlate of neural functioning is a conscious state, whether accompanied by awareness or not. When accompanied by awareness it belongs to the normal (personal) consciousness; when not accompanied by awareness it belongs to co-consciousness. To consciousness accompanied by awareness he applies the term 'self-consciousness', implying thereby not consciousness or awareness *of* the self, but consciousness or awareness *by* the self. That ordinarily he uses the term 'conscious' as being synonymous with 'mental' is shown by the following quotation: "It is difficult to conceive of anything worthy of being called a sensation or perception, excepting so far as there is a self to experience it; and yet it really is a naïve conception to imagine that we are self-conscious of each and every mental state that is aroused in correlation with our nervous system" (p. 427).

Dr. Prince's denial that co-conscious perceptions and feelings are the experiences of any self seems to the present reviewer the most questionable part of his teaching. He seems to base his opinion largely on the authority of the hypnotic phase of one of his subjects who declared that the co-conscious processes accompanying her ordinary life occurred as discrete perceptions and feelings not synthetized into a personality, and that only later, when remembered by the hypnotic self, was it justifiable to use the pronoun 'I' in connection with them. But although this may be true of the extra-marginal or subconscious perceptions of normal life, it is probably not true of pathological dissociations.

If there is no awareness, by any self, of co-conscious thoughts and feelings, it would seem that the 'co-conscious' of Morton Prince is indistinguishable from the 'descriptive unconscious' of Freud; that is to say, it is merely a region of the mind not illuminated by consciousness. But to relegate co-conscious phenomena to the 'descriptive unconscious' of Freud is to relinquish all that is most distinctive of Dr. Prince's studies. His demonstration of co-consciousness is not merely a demonstration that mental activity may take place of which the waking self is unaware, but is a demonstration of a doubling of consciousness—of consciousness in the sense of "awareness by a self."

T. W. MITCHELL.

Science and Personality. By WILLIAM BROWN, M.A., M.D., D.Sc. (London: Oxford University Press: Humphrey Milford. 1929. Pp. viii + 258. Price 12s. 6d. net.)

Dr. Brown describes this book as a sequel and completion of his previous book, *Mind and Personality*. Its general purpose, he says in the preface, is to consider religion in the light of science and philosophy; and in accordance with this, the book begins with a section in which the general definition of religion is discussed. He also says that his book is an attempt to deal with the problem of personality in its relation to science and to the general conception of value; and in accordance with this, there follow two sections dealing with the physical, the biological, and the psychological sciences, and ten sections dealing with various psychological topics along the lines of Dr. Brown's own special work. Printed by themselves, these ten sections would form an excellent collection of essays under any of the titles *Psychology and Psychotherapy*, *Talks on Psychotherapy*, or *Suggestion and Mental Analysis*. They all deal with various aspects of personality, though they have little relation either to the consideration of religion or to that of value. Sections XV and XVI, on *Personality and Psychic Research*, discuss with admirable scientific temper the kind of evidence Psychic Research provides, and for

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what conclusions it can be utilized. The second of these sections is a detailed discussion of four sittings Dr. Brown had with the medium Mrs. Osborne Leonard. One sitting is reported verbatim in the Appendix. Whilst these sections are of great interest, I do not feel that they stand in any integral relation to the topics of the rest of the book. Finally, however, Dr. Brown seems to be determined to implement his promise of the preface, for he concludes with a section on *Faith, Love, and Personality*, in which, he says, religion is his central problem. Interesting as this is, it is very discursive; the various aspects touched on are not linked up either with one another or with the previous sections of the book. But while his book as a whole seems to suffer from an attempt to do three things at once, his sections are always stimulating and suggestive.

L. J. RUSSELL.

The Ordeal of this Generation. The War, the League, and the Future. By Professor GILBERT MURRAY, LL.D., D.Litt., F.B.A. (London: Allen & Unwin Ltd. 1929. Pp. 236. Price 4s. 6d. net.)

If, in the coming time, men review the effort of our generation to get rid of war, they will find Professor Murray's book an index of how far a wise man, a great humanist, one who has had exceptional opportunities of studying and furthering the work of the League of Nations, had reached in 1929. Perhaps they will wonder, in that future time, why Professor Murray should have to begin his book by clearing up elementary questions about peace and war. But in our time, even after a century of pacifist endeavour, there is still need for his scrupulous distinction between strife and war—strife, which is an enduring and necessary element in life, and war, which is not an instinct or an element in human nature, but "a form of state action," "part of a political programme." "War," Professor Murray says, "is one particular development of the principle of strife, just as Bluebeard's household was one particular development of the principle of marriage." And the peace we need is, of course, not mere repose or absence of strife; it means freedom to get on with the job that gives meaning to life—the job that Professor Murray calls "the service of civilization."

He goes on to recall how the apparently stable 'cosmos' of the nineteenth century broke down into chaos, and the communities living side by side on this one planet would not pay the price of peace: they insisted on being independent sovereign states, free to be judge in their own case, free to make war at any time for any cause. Even now, after all the passionate writing of E. D. Morel, the cool scholarship of Dr. Gooch, the disclosures in the publications of the Foreign Offices, and Lowes Dickinson's great book, *The International Anarchy*, we still realize far too little how atrocious were the assumptions upon which pre-war diplomacy was based. The inevitable crash came; and then the League Covenant. The book summarizes the principles of the Covenant, showing, for instance, how it curtails, but does not wholly abolish, the old anarchic "right of private war"; and how the organs of conciliation and judicial decision now available do offer an alternative to war for the settlement of all kinds of international disputes.

Professor Murray rightly lays stress on the point that, though prevention of war is the League's most urgent task, the building of peace by international co-operation is the objective; and that, for that enterprise, the League's system of "Conference, *plus* a permanent Committee or Secretariat," is indispensable.

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It would be interesting to know what the reviewer of the future will make of Professor Murray's cautious treatment of the problem of sanctions. He recognizes, of course, that something must be done to put a stop to a breach of the common peace, if it should happen: some sanction is necessary, not for the enforcement of decisions, but for deterring, and in the last resort coercing, the peace-breaker. But he recognizes, too, that 'world-loyalty' is still very weak, and that the League's 'sanctions' might easily prove ineffective if the peace-breaker happened to be powerful, or might impose intolerable burdens on those helping to enforce them. The sanctions are tolerable only if they are made part of a system in which the danger of their being used and of their being abused by the strong is reduced to a minimum; in other words, if they are made part of a system in which radical disarmament and all-inclusive pacific settlement have been generally accepted.

On the great contemporary problems, such as Disarmament, Arbitration, the Mandatory Principle, the Treatment of Minorities, etc., Professor Murray writes scrupulously as a non-partisan; but, like Mr. Howard Ellis, Professor Madariaga, and indeed every progressive writer on such subjects during the past year or two, he cannot suppress what amounts to a grave indictment of the policy of the late British Government. Coolly he records, and leaves to the reader's judgment, that Government's objection to any more radical curtailment of the right of private war, and to any extension of the principle of arbitration. He shows how such a policy is especially dangerous to this most vulnerable of empires. But only occasionally does he allow a passionate impatience to break out. "We may go to arbitration, say these strange diplomats, but we must not promise beforehand to go to arbitration. We do not wish to go to war, but we must never promise not to go to war. We must keep our hands free! In God's name, free for what? . . . They call it a policy of caution. It seems to me like caution run mad . . . a survival from times when conditions were quite different; a remnant of eighteenth-century diplomacy."

Soon part of the argument will pass out of date; for soon, we may now expect, some of the developments desired by Professor Murray will be realized: soon, even those on the political right will be taking for granted much of what Professor Murray had still to urge in 1928 (when the lectures composing this book were delivered). But the book's subject is not confined to immediate issues, and the task of evolving order out of international anarchy is not finite. The book will not soon lose its value as an additional contribution, by a lucid and liberal mind, to the creative enterprise of peace-building.

W. ARNOLD-FORSTER.

Animal Psychology for Biologists. By J. A. BIERENS DE HAAN. (University of London Press. 1929. Pp. 80. Price 4s. 6d.)

We have in this little book three lectures delivered by the author to a King's College audience. The purport of the lectures is indicated by the title of the book. The difficulty author and reader have to face is that any instance of behaviour raises the root-question: What is the relation of body and mind? When behaviour is in progress they are always in some way hyphened as body-mind. But in what way?

There are those who regard the progressive evolution of mind as contributary to the survival and well-being of organisms; they find in the behaviour of animals no evidence of purpose on their part till a high level of reflective procedure is reached; then, as interpreters, they say: Here is purpose at last.

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There are others who find evidence of purpose at the very lowest levels of behaviour; hence they say: There was purpose from the first. They regard the material body as instrumental to giving effect to this purpose. Our author is one of these others. He says: "The nervous system is only the instrument the mind uses to control the body." When one comes down to the behaviour of such an organism as Stentor the more comprehensive statement would be: The body is only the instrument which the mind of that unicellular creature uses to effect its purpose.

In saying that the nervous system is only instrumental to the mind, and in imputing purpose to lowly organisms, Dr. de Haan nails his colours to the mast. Those who sail under a different flag will again and again, when they come to details, place many a ! or ? on the page-margins of their copy of his book. That is to be expected, since, as things are, any writer on psychology for biologists is pretty sure to advocate that philosophical hypothesis of the relation of body and mind which he has been led to espouse.

If he keeps this in view, and exercises his own judgment, the reader will find very much that is of interest and of value in Dr. de Haan's lectures. The subject-matter is well arranged; the observations, his own and those of others, are admirably chosen; where he differs from his co-workers in a controversial field of inquiry, he does so with becoming courtesy.

His choice of a definition of psychology as "the science of *subjective* phenomena" is, I think, provocative of verbal discussion. Subjective in what exact sense? His second lecture deals with The Animal as Knowing Subject. But do not the cognitive processes on which he lays stress imply mental reference to the *objective* world? If it be said that the objects under reference are non-mental, is not this, too, provocative of discussion? Why stir these troubled waters of subject-object relations? I submit that the word "mental" is preferable to "subjective" and carries less of theoretical implication. Perhaps any definition is either tautological or couched in negative terms. What seems to need emphasis is that psychology is the science which deals with relations that are not physical only, but are none the less effective in evolutionary advance.

I am loth to call attention to a matter in some measure personal. I do so because it bears on many of the statements in this book. Some years ago (1894) I suggested a canon of evolutionary interpretation. Of this Dr. de Haan says that it "prescribes that we may not interpret any case of animal behaviour as the outcome of higher mental faculties, as long as it is possible to interpret it in terms of simpler ones." Here, through some oversight, the word "simpler" is substituted for "*that stands lower in the psychological scale.*" This changes the whole complexion of the canon. By altering what is clearly printed (in italics) it is open to our author to say that "it is not the aim of science to explain the facts as simply as possible, but as truly as possible."

And the bearing of this. Take this statement that "the bird builds its nest after an innate idea of it, while being driven by an internal impulse which we call the instinct of construction" (p. 49). Here "an innate idea," or, let us say, an image of the completed nest, implies (for me) a "higher" mental process than that far "lower" mental process in terms of which I should interpret nest-building. But though far lower, it is not far *simpler*. It is very complex. Broadly speaking, explanation in terms of high-level purpose is generally very much simpler—much more easy to understand—than interpretation in those terms which I should designate evolutionary. And even if what I said, many years ago, with regard to "lower" and "simpler" was ill-expressed, might not so courteous a critic give me credit for trying to interpret "as truly as possible"? Why does not Dr. de Haan say frankly:

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This canon of interpretation must be wholly rejected? To accept it would restrict purpose to "high-level procedure," whereas my belief is that the behaviour of the amœba can be explained only in terms of purpose on the part of this lowly organism.

There is one more point on which brief comment is pertinent. In lectures addressed to biologists one might expect salient reference to the "conditioned" response to stimulation. But there is none, though often enough it is clearly in evidence in the instances of behaviour which are adduced. No doubt "conditioning" is a neurological and not a psychological concept. But can one read the record of Dr. Pavlov's work without realizing the illuminating light that it throws on the problems of animal perception? Surely something should have been said to biologists on this topic.

It has been incumbent on me to state plainly that many of the author's conclusions are such as I am unable to accept. What of that? I can cordially recommend all those who are interested in the minds of animals to get this little book and to read it with care.

C. LLOYD MORGAN.

The Psychology of Philosophers. By ALEXANDER HERZBERG. (London: Kegan Paul, Trench, Trübner & Co., Ltd. 1929. Pp. x + 228. Price 10s. 6d. net.)

This book, which is translated from the German by E. B. F. Wareing, is an astonishing mixture of good argument with vile. The author, who speaks as a semi-Freudian, begins with an admirable brief account of the meaning and historical rôle of philosophy; and he makes some use of this excellent introduction towards the close of the book. The central part of his argument, however, begins *de novo*. He selects a team of thirty notable philosophers, from Socrates to Nietzsche, choosing the thirty from an assumed universal suffrage in favour of their pre-eminence, and then proceeds to argue, almost always entertainingly, with a complete disregard for logic and for the most elementary fairness.

His thesis is that philosophy is a kind of agoraphobia—taking the *agora* to mean the "market-place" in Bacon's sense—or a neurosis whose chief characteristic is unsuitableness for practical life, owing, not to pre-occupation with an absorbing pursuit, but to a definite and more or less pathological inhibition. This view, apart from the psycho-analysis in it, is, of course, commonly held; and it may be true, although there are some reasons for considering it a vulgar error. By no stretch of imagination, however, could it be said to be proved, even in the loosest sort of way, by the pretence at argument adduced by this author.

Success in practice, Mr. Herzberg says, is shown in five main departments, and all normal men (he is careful to say that "normal" means "average") succeed in the whole five. Every normal man makes a success of his profession, and has a profession. He is also a successful money-getter (not merely a money-saver); a successful husband and father; a good mixer socially in largish companies; and a politician of some note—as one gathers, at least a member of Parliament. If 1 mark be assigned for success in each of these departments, every normal man would score 5, and thirty normal men, chosen at random, would score 150. This preposterous rubbish is gravely stated on p. 89.

By a variety of largely inconsistent and most unscrupulous arguments, Mr. Herzberg succeeds in reducing the marks of his thirty philosophers in these five departments to a beggarly thirty-four. Thus, without any inquiry as to the meaning of a "profession" in Greece, say, and with a bland denial that

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literature or philosophy is itself a profession, we are told that nearly all the great philosophers were professional failures. If Plato was a successful teacher in the Academy, he interrupted his teaching to go to Syracuse. Therefore he was a professional failure. (Or, in the alternative, he failed at Syracuse.) Hume may have been a successful librarian and literary man, as well as a good secretary to an embassy. But he failed to be appointed to the Edinburgh Chair of Philosophy. Therefore he was a professional failure. Kant was appointed to a philosophical chair, and held the chair, with admittedly great success, for a long period. He refused, however, to leave Königsberg and be a professor in some other places at a higher salary. Therefore he also was a professional failure.

I do not think it is necessary to proceed with this entertaining nonsense. If philosophers marry late, or do not marry at all because they are hard up, the debit side of their account is reckoned twice over. They get a bad mark for being poor, and therefore incapable in practical affairs, and another bad mark for not being married, even when their reasons were business ones. And so on.

Those who are interested in philosophical biography will obtain much enjoyment from this book, partly because of, and partly in spite of, the author. He has a great fund of moderately reliable gossip on such points. The Freudians will probably blame him for showing undue restraint, and other people will marvel at his turn of mind.

JOHN LAIRD.

Received also:—

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CORRESPONDENCE

To the Editor of the *Journal of Philosophical Studies.*

MORAL VALUES.

Sir,

Judging from its title, I expected to find in the article on "Moral Values" in the July number of this *Journal*, by Professor J. L. Stocks, a description and outline of these values—in other words, some practical information as to what the values consist in and how they may be attained. This expectation met with disappointment in considerable degree. Professor Stocks contends that moral value lies rather in certain qualities of actions than in any ends to be attained, and thinks the ends cannot be satisfactorily defined. He says, page 304: "the system of all goods . . . escapes definite description, and must therefore fail to serve as the recognized justification of human action."

Professor Stocks is responsible for another disappointment in my quest of definite presentations of moral codes. He reviewed favourably in the January number Professor E. F. Carritt's *The Theory of Morals: An Introduction to Ethical Philosophy*, and in his comments said he hoped he could "tempt everyone who has to conduct a class in introductory ethics to adopt Mr. Carritt's book for the purpose." But Professor Carritt also is agnostic rather than positive, demolishing to his own satisfaction every known theory of morals and presenting none of his own, except individual intuitionism, which asks each person to meet his or her own difficulties, with little or no assistance from moral rules.

These two writers have many associates in their views, but this fact is all the more regrettable. If no definite truths can be presented, why study the subject at all or write about it?

I write not as one lost and calling for help in life's wilderness, though it is true the paths are not as dependable as might be desired. There was a period in my life when the ways were indeed strange and confusing, when conventional teachings gave no guidance. Those years are long past, and happier and more confident times have come. But the successful emergence into light was due more to good luck than wisdom, and I shudder when I think of the narrow escapes from disgrace and ruin. I say it is nothing less than criminal to ask the individual to face the perplexities uninstructed and untrained.

As I passed through the various miseries and perils, I determined more and more to codify the knowledge that was gained, both for my own benefit and for that of others. About fifteen years ago or more I had formulated a general code. I have constantly endeavoured to improve it, but the salient features have not changed radically, and I have found it capable of solving practically all the questions that have arisen.

My studies led me to conclude that human life has at least five fundamental features or characteristics: (1) We have bodies. (2) We have minds. (3) We are plural—that is, there is not only one but many individuals. (4) We propagate our kind, rearing new generations and not living everlastingly. (5) We are active. The last of these is the foundation of conduct, and its interrelation with the other four features and with the environment gives rise to four primary divisions or classes of conduct. Actions with respect to the body consist in the pursuit of food, clothing, comfort, safety, and health. Actions in the interest of the mind comprise those in pursuit of knowledge, æsthetic enjoyment, and character. Actions arising from the plurality of individuals are those involved in social intercourse, business, government, etc. Actions pertaining to reproduction include of course sexual relations, family life, child-rearing, and care of the aged.

We thus have four cardinal classes of duties—physical, mental, social, and reproductive. These are incumbent upon humanity in general, but not uniformly upon

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each individual. There is still another fundamental feature in human life, but one which may be regarded as largely emergent, namely, organization or functionalism, whereby individuals, both because of genius or defects and because of the division of labour, specialize along certain lines and are in some degree excused from other lines. For instance, an especially fit married couple would rear a large family, while an unfit couple would have no children or only a few. An artist or writer, with rare gifts, might be excused from family life.

Under each class of actions, and in some cases common to several, are moral rules, or virtues. A few are: temperance in eating, truthfulness in social relations, chastity and filial love in reproductive conduct, open-mindedness in intellectual pursuits, patriotism, and public spirit in government.

Actions may be classified also with reference to the persons affected. Those in the interest of the actor are egoistic; those in the interest of other persons are altruistic; those for the benefit of society are social or functional. This plan of division is fundamental in part, but it is interwoven, needless to say, with the classes in the other outline.

There should, of course, be more definition of premises and explanation of details, but lack of space at present forbids. These outlines are not regarded as faultless, but have been devised in the absence of any light that has seemed adequate. Inthe main they seem to be sound, and they not only describe conduct that is completed, they reveal developing principles that point into the future.

CYRUS H. ESHLEMAN.

LUDINGTON,
MICHIGAN, U.S.A.
July, 1929.

TO THE EDITOR OF THE *Journal of Philosophical Studies.*

THE RELATIVITY OF FREE WILL.

SIR,

I am writing to make a few observations regarding Sir Herbert Samuel's very interesting article in your July issue entitled "The Relativity of Free Will." Is not the essential element in the concept of free will the existence *at times* in human life of *open alternatives*? I say at times, for it would only be an impossibly extreme form of that doctrine which would regard such open alternatives as always existing. I face a given situation. How shall I act? Does the fact that I live in a given environment, and possess a given inherited character, preclude me from taking any but one predetermined course of action? Or are there open for me at the moment of seeming choice alternatives, one of which I select? If the former is true, I do not possess free will, and to speak of its relativity seems only to confuse the issue; while in the latter case the use of the qualifying word is unnecessary. In the sense that I have used the word, free will must be—for the occasion on which it is exercised—either absolute, or an illusion.

If one turns to some of Sir Herbert Samuel's illustrations, one finds that they do not fit the case under discussion. The sun does move round the earth: it is only a question of our frame of reference. When we sit down we are at rest in the sense that the word "rest" is used. Likewise, our bodies are solid in the sense that we use the word. But at our moment of "choice" there are either alternatives open for our thought or action, or there are not. The one proposition excludes the other. If there are not such alternatives, free will is an illusion—one which is, of course, inevitable; also, possibly, one which is useful and interesting, but an illusion nevertheless.

At times Sir Herbert Samuel expresses his determinism in language which is the property of the libertarian. For this he cannot really be blamed, as, in an ultimate sense, on his own theory he has no choice in the matter, but one may point out the confusion of thought involved. Consider the following quotations, in which the italics are mine.

". . . it is shown by experience that people who have received a general education, or who have had a good moral training, conduct themselves better than people who

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have not, *we set* those influences to work on the children of succeeding generations, with the expectation that they will have their effect in the actions which they will choose to do."

"We do, in fact, dimly recognize that, while we cannot trace the effect of all the vast complex of causes that determine character, we can here and there trace the effects of some of them. It is for that reason that *we try to set* on foot those agencies which will influence character, and therefore influence the choice of actions, in a way that will benefit the individual and the society."

"Since, however, emphasis is laid on the principle of causation, the doctrine, if it were generally held, should lead, not to a fatalistic apathy, but to a more intense activity, *designed to ensure* that the causes which will mould the future shall be as *beneficent as they can be made*."

I suggest that such language is pointless and confusing, unless we have the power *not* "to set on foot those agencies which will influence character," etc. The determinist can speak legitimately, of course, of agencies influencing character, but he is guilty of an informal contradiction if he adds the conception of "ought" to his formula, which the author does in the quotations given. The *sense of "oughtness"* may be regarded as one of the factors which determines character, but the *"oughtness"* itself must be for the determinist an illusion having no ontological significance.

An idea of great importance in man's higher experience is expressed by the doctrine of free will; but formal thought, perhaps by its very nature, seems to favour determinism. The object of this letter is to contend that no light is thrown on this ancient problem by the use of the word "relativity"—a word clearly borrowed in this case from physics, which is a study of events on a lower level than that of mind.

ERNEST F. CHAMPNESS.

WALLINGTON,
July, 1929.

TO THE EDITOR OF THE *Journal of Philosophical Studies*.

SCIENCE AND REALITY.

DEAR SIR,

Volume No. 37 in Benn's Library is an interesting Essay on *Science and Reality* by Professor R. A. Sampson, Astronomer Royal for Scotland.

On page 10 he divides the Sciences with which he has to deal into three distinguishable regions according as these concern Thought, Observation, and Life, and he takes as illustrations of their character and differences the sciences of Geometry, Astronomy, and Medicine.

We suggest that the place which is thus assigned to Geometry is incorrect. Geometry is not in any special sense the Science of Thought. All science is the constant product of observation and thought, but Thought is not the *object* of geometrical, any more than of astronomical, reasoning.

There is a Science of the Laws of Thought—we call it Logic or Epistemology. Its sphere is well defined, and does not include any properties of space. The metaphysician and psychologist are therefore within their rights in challenging the view that Thought is the object of geometrical reasoning. What then is that object? Geometry, we suggest, is the Science of the forms of the free mobility of our bodily organism amidst its environment.

The question is important. If the view we have expressed is sound, the propositions of Euclidean Geometry are for us necessary, and *a priori*. This does not prevent the human mind from formulating a Geometry which is independent of the bonds of the Euclidean system. That has been done; but such Geometry does not apply to *our* physical experience.

Professor Sampson, on page 11, speaking of Euclidean Geometry, tells us that "its arguments are still regarded as valid, but they are now seen to be not inevitably so."

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This rather indefinite statement is made clear when we recognize two degrees of apriority:—

(1) The apriority of Pure Thought.
(2) The apriority of the forms of our free activity.

The proposition which we have challenged expresses, we believe, the general view of scientists to-day. In view of recent discussions it is important to know whether it is accepted by psychologists. In short, is Geometry, as recent Science suggests, a self-contained system of enumerated postulates which can be discarded at pleasure, or is it a description of the characters of our organic activity, and therefore *for us* necessary and apodeictic?

Yours faithfully,

ALEX. PHILIP.

THE MARY ACRE,
BRECHIN.
September, 1929.

A POSTHUMOUS portrait of the late F. H. Bradley, O.M., Fellow of Merton College, has been painted by Mr. R. G. Eves, and can be seen at the College.

Subscriptions towards the cost of the portrait will be received at Barclays Bank Ltd. (The Old Bank), High Street, Oxford. Subscribers of one guinea and upwards will receive a photogravure copy. Cheques should be paid to the "Bradley Portrait Fund" and crossed "Barclays Bank." A sum of about £250 is required.

Any surplus will be applied to the expenses of the Bradley Library, which has been founded out of a bequest made by Mr. Bradley to the College.

J. C. MILES
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MERTON COLLEGE,
July 1929.

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INSTITUTE NOTES

MICHAELMAS Term begins on October 10th and ends on December 20th.

The following courses of lectures have been arranged, to begin in the Michaelmas Term of the Session 1929–30:—

"MIND AND NATURE": A course of six weekly lectures by Professor LEONARD J. RUSSELL, M.A., B.Sc., D.Phil., on Fridays, at 5.45 p.m., at the Royal Anthropological Institute, 52, Upper Bedford Place, W.C. 1, beginning October 11, 1929. Fee for the course, 12s. 6d. (Members half fee.)

"THE INTERPRETATION OF DEVELOPMENT AND HEREDITY": A course of six weekly lectures by E. S. RUSSELL, M.A., D.Sc., F.L.S., on Mondays, at 5.45 p.m., at University College, Gower Street, W.C. 1, beginning November 4th. Fee for the course, 12s. 6d. (Members half fee.)

"INTRODUCTION TO PHILOSOPHY": A class by the Director of Studies, in the Michaelmas and Lent terms, on Wednesdays, at 6 p.m., at University College, Gower Street, W.C. 1, beginning October 16, 1929. Fee for the course, £2 2s. Terminal, £1 5s. (Members half fee.)

The full syllabus for the Session can be obtained on application to the Director of Studies, 88, Kingsway, W.C. 2.

The first of the Evening Meetings for the Session will be held at the Royal Society of Arts, 18, John Street, Adelphi, London, W.C. 2, on Tuesday, October 15th, at 8.15 p.m., when William Brown, M.A., M.D., D.Sc., M.R.C.P., will give an address on "Mind and Body."

STUDENT-MEMBERS "AT HOME."

On Wednesday, June 26th, student-members held an "At Home" at University College, Gower Street, when Mr. E. Garcke, M.I.E.E., Deputy-Chairman of the Executive Committee, opened a discussion on "The Function of Philosophy in Modern Life." The meeting was well represented by past and present students, and the discussion proved both interesting and instructive. The object of such "At Homes" is to enable students to know each other more intimately, and to discuss questions and problems which arise as a result of attendance at lectures and meetings.

WIRELESS "TALKS" ON PHILOSOPHY.

A series of talks on philosophy have been arranged by the British Broadcasting Company for the Michaelmas Term. On Tuesdays, from 8 to 8.30 p.m., September 24th to October 9th, Professor W. G. de Burgh will talk on "The Meaning of Ethics"; and on Tuesdays, 8 to 8.30 p.m., November 5th to December 10th, Dr. William Brown, an eminent authority on Psychology, will give six talks on "Mind and Body."

No doubt many of our readers will wish to listen to these "Talks" in their own homes, and possibly also to bring them to the knowledge of friends likely to be interested. But it is thought there may be some who, should circumstances permit, would welcome attachment to a group of members forming a study-circle, the "Talks" providing material for discussion and a

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stimulus to reading. Study-circles of this kind would probably be particularly appreciated in country towns, and by those members of the Institute who reside abroad.

Among the members of the Institute there are probably some who are competent and would be willing to act as leaders of discussion groups, and to take the initiative in bringing such groups into existence. The central body of the Institute desires to encourage the formation of study groups throughout the country, and in co-operation with the British Broadcasting Corporation would render every possible assistance. To those to whom this suggestion appeals, an invitation to communicate with the Director of Studies is cordially extended.

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